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THE BROAD PURPOSE OF THIS PROJECT WAS TO SYSTEMATIZE INFORMATION ABOUT INDEPENDENT STUDY IN SECONDARY SCHOOLS BY DEVELOPMENT OF A DESCRIPTION AND ANALYSIS OF THESE PRACTICES IN THE SCHOOLS STUDIED. THIS INFORMATION WAS COMPILED BY THE USE OF QUESTIONNAIRES AND VISITS TO EACH OF 317 SECONDARY SCHOOLS BY RESEARCH TEAMS. ONE OF THE FIRST CONCLUSIONS REACHED WAS THAT INDEPENDENT STUDY IS PROBABLY MORE COMMON IN EDUCATIONAL DISCUSSIONS AND LITERATURE THAN IN PRACTICE IN SECONDARY SCHOOLS IN FLORIDA. ALTHOUGH MOST INDEPENDENT STUDY PROGRAMS ARE DIRECTED TO THE ABOVE-AVERAGE STUDENT, A FEW INVOLVE THE SLOWER STUDENT. WHILE INDEPENDENT STUDY WAS BEING USED IN PRACTICALLY ALL CURRICULUM AREAS, SYSTEMATIC EVALUATION OF INDEPENDENT STUDY IS ALMOST NONEXISTENT. FORMULATED HYPOTHESES AND QUESTIONS ABOUT INDEPENDENT STUDY WHICH NEED FURTHER RESEARCH WERE LISTED. (GD)

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INDEPENDENT STUDY IN SECONDARY SCHOOLS

Cooperative Research Project No. 2969

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Gainesville, Florida

1966

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June, 1966

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CHAPTER I

DESCRIPTION OF THE PROJECT

Cooperative Research Project No. 2969 (later identified as Bureau No. 5-0440-2-12-1) aimed to define and describe independent study practices as they existed in a sample of secondary schools in the school year, 1965-66. It was hoped that a survey of such practices would give some direction to future research and practice related to a highly important aim of secondary education, the development of the independent learner. Some specific aspects of the project -- its bases, objectives, and procedures -- are described in this chapter.

Background of the Project: The Problem

The problem area in which this project was germinated is that of how to develop individuals skilled and interested in continuing their learning after completion of schooling -- in this project, after completion of the secondary school. Certainly if the major objective of education is, as we believe, the development of such individuals, the school must provide opportunities for the student to learn on his own. "Independent study," in its simplest definition, is learning on one's own.

Recent developments in secondary education have emphasized the need for greater emphasis on independent learning and, therefore, on plans of teaching and learning which are of an independent study nature.

Widespread concern for more self-motivated learning and development of independent study skills reflects dissatisfaction with traditional "assign-study-recite" methods of instruction. "Independent study" as a significant phase of the secondary school student's schedule has in recent educational history been most widely promoted and publicized by the Commission on Staff Utilization appointed by the National Association of Secondary-School Principals and the writings of J. Lloyd Trump (Trump, 1966; Trump & Baynham, 1961), Associate Secretary of NASSP. The publications resulting from or associated with the work of this Commission have suggested that 40 percent of high school students' time should be spent in independent study activities, and have cited various practices of secondary schools designed to improve and increase independent study arrangements. A survey (Singer, 1962) published by the Association in January, 1962, reported that "comparatively large numbers" of schools were providing independent study arrangements. A number of other publications (including Beggs & Buffie, 1965; Brown, 1963; Bush & Allen, 1964; Congreve, 1965; "Depth...," 1963; Dixon, 1962; Goldsmith, 1965; Griffin, 1963; Heller, 1961; Manning & Olsen, 1960; Oregon School Study Council, 1962; Pedley, 1964; Reavis, 1965; Sand, 1963; Skokie Junior High School, 1964; Smith, J. E., 1961; and Whitmire, 1965) have described some of these plans and usually predicted their expansion.

Despite this growing interest in independent study in secondary schools (Alexander, 1966; Bentley, 1966; Dale, 1966; Grazier, 1966; Hartz, 1965; Wells, 1966) there was not available when Project No. 2969 was approved (nor at the present time, we believe) any systematic survey and analysis of independent study practices and arrangements in secondary schools. Such a study was considered essential to more careful evaluation of and experimentation with independent study in secondary schools. Even in 1962, a state supported research project in Washington reported as "An Inquiry Into Independent Study" (Smith, Janet, 1962, p. 10) reached the following conclusion:

> The published reports from independent study schools indicate sustained commitment to this method of instruction. One hopes that as schools have an opportunity to examine their programs over the next several years, more substantial evaluation will be evident. Schools must clarify objectives. They must also formulate assumptions -- assumptions about the students participating in the programs, about the nature of the subject matter they are to deal with, about the role of the faculty, and about the physical facilities. They must be prepared to examine these assumptions carefully and honestly. Evaluation based on less than this will reveal little useful information about independent study.

The problem remained the same in 1965, when Project No. 2969 was approved. It was believed that a careful survey and analysis of independent study practices in a sample of schools having such practices would make possible more systematic exploration and research regarding a development that seems very promising in secondary education.

Objectives of the Project

As just suggested, the broad purpose of this project was to systematize information about independent study in secondary schools by development of a description and analysis of these practices in the schools studied. A secondary, but related, purpose was to formulate, as a result of the study, hypotheses and questions about independent study that could be tested and answered in subsequent research.

More specifically the project aimed:

A. To determine the following characteristics of independent study as carried on in selected secondary schools:
   1. Purposes of independent study plans
   2. Types of learning activities involved
   3. Identifiable products of independent study
   4. Relationship of independent study to work of regular classes
   5. Nature of teacher supervision of independent study
   6. Devices used to interest pupils in doing independent study
   7. Time and facilities for independent study

B. To obtain (and report) such evaluative data as available in the selected schools on these items:
   1. Achievement of pupils concerned
   2. Spread of the practices in the schools
   3. Reaction of pupils, teachers, and administrators to independent study plans

C. To determine the opinions of administrators in the selected schools and of the teachers supervising independent study, regarding these questions:
   1. What skills do teachers need to supervise independent study effectively?
   2. What facilities in the school aid, and what facilities restrict independent study?
   3. How, if at all, is regular classroom teaching affected by the use of independent study?
   4. What are the values of independent study plans?

5. What problems are encountered in using independent study plans?

6. Should the use of independent study plans be expanded or curtailed?

Related Research

In two reports Jackson and others (Jackson, 1959; Jackson, Changnon, Brown, Westmeyer, & Shoemaker, 1960) described the development of experiments in independent study carried on at the University of Illinois High School. The final report (Jackson, et al., 1961) of these five projects was prepared by Jackson, Shoemaker, and Westmeyer. The first project centered around a course titled "Advanced Problems in Science," which was open to gifted students in science so that they might obtain advanced study in their chosen fields independently of formal instruction. No class meetings were held, and the students had conferences with the supervising teacher to develop plans for their study. The students were responsible for following the plans and they could ask for help when they needed it. Evaluations by the students were always positive, and there were no adverse comments regarding the program's effect upon college experience. Some of the conclusions drawn were that the course proved worthwhile as far as the University High School was concerned, that a minimum of supervision was necessary, and that such a course would be a desirable and inexpensive way to allow the gifted students in a school to have a special experience in science. In another project, "A Method of Teaching Chemistry in the Laboratory," it was found that students might be given a large share of the responsibility for planning and carrying out laboratory activities by the end of the course. A third project titled "Increased Responsibility for

Seniors" aimed to ease the transition from high school to college and provided procedures by which seniors were made responsible for managing their own time outside of regularly scheduled classes, being excused from study halls and given the responsibility for managing the tir themselves. On the basis of a follow-up study, the authors concluded that there was no significant difference between the class of 1958 (who did not have the benefit of self-management in their senior year) and the class of 1959 (who did) in grade point average or in the number of hours reported as spent in studying during the freshman college year. Also reported were: no negative opinions about the project, a significant reduction in teacher time devoted to study hall and supervision, and the judgment of the faculty that the project was successful. Independent study in a fourth-year French course was also investigated with the students spending two class periods with the teacher and three periods in independent study (using records, tapes, and other resources) per week. The French teacher felt that the students learned as much as they would have in the conventional five periods per week in the conventional classroom with the teacher. The last project was in biology with much of the effort being put into developing materials to be used in the laboratory by students to help them learn to work on their own. The authors reported that a significant number of techniques were located and sufficient experience was gained to establish the feasibility of independent work in the science laboratory.

Correspondence study, a type of independent study, has long been used by smaller high schools to expand and enrich the curriculum of their students. In summarizing the research on correspondence study, Childs (1952) stated that students who took these courses tended to be above average in mental ability, that their achievement was generally satisfactory (in some cases more so than students who studied by more traditional means), and that they may be somewhat more likely to succeed in college. In one study of his own, he found that supervised correspondence students exceeded the achievement of the students in regular classes against whom they were matched.

Programmed instruction is another method which has been theoretically related to independent study; thus, such terms are used in the literature on programmed instruction as "self-instructional," "auto-instructional," and "self-teaching" devices. Research in this area has markedly increased since 1958, according to Fry, Bryan, and Rigney (1960), but the research has tended to deal with areas of programming, mechanics of presentation, and comparisons in achievement of groups taught by programmed instructional materials with those taught by conventional methods and materials, and also comparisons of groups taught by different types of programmed instruction. The advantages and limitations of programmed instruction for independent, individualized study have been neglected in the research. Schramm (1962) stated that students do learn from programmed instruction; yet he pointed to several questions which still remained to be answered, including: for what kind of teaching, in what situations, and with what students are programmed materials to be preferred to other methods of teaching? The conclusion of Cronbach (1962, p. 47) affirms the lack of research on the use of programmed instruction as an aspect of independent study: "Nearly all the experiments have compared groups studying the same instructional material, presented in different ways. We have no adequate histories of long-continued programmed instruction, in which each pupil is working at his own level, and no adequate observations on the integration of programmed instruction with class instruction."

Summary

Research directly related to the use of independent study plans in secondary schools has been sparse. Even the scope of practices used is not well defined; for example, the research on programmed instruction, a possible technique of independent study, gives little attention to the possibilities of including this plan in the secondary school's program of independent study. Thus, the interest in and possibilities of the independent study idea for secondary schools combined with the lack of definitive surveys and research in this area justified this Cooperative Research project.

Procedures Used in the Study

Essentially the procedure of this project was a first-hand collection of data, in a sample of schools known to have independent study plans in operation, relating to the characteristics of these plans and to the opinions about them held by teachers, students, and administrators. More specifically, the sample of schools had to be selected, the instruments and other plans for gathering data had to be prepared, and the data collected and analyzed. The steps involved are briefly described in this section.

A step, however, that had to be taken even in the proposal for consideration by the Cooperative Research Branch of the United States Office of Education, was an attempt to define "independent study plan." In view of the vague and differing definitions available in 1965, this study indeed aimed to achieve a more comprehensive and precise definition and thus to result in, rather than start with, a really satisfactory definition. However, for purposes of identifying schools and practices therein for study, the project was limited initially to study activities of students in grades 7 through 12 which had these characteristics:

A. Differed from uniform homework assignments (including individualized study assignments in classes where each student must have such an assignment, as in the choice of required term papers or projects) to all members of a class

B. Involved studies carried on in school facilities, or in outside facilities by arrangement of teachers

C. Were individually planned for each student concerned

D. Received school recognition in the form of course credit, full or partial, or other evaluation entered in official school records

Selection of Schools

Orginally Project No. 2969 was to be limited to states east of the Mississippi River so as to limit travel costs and time, and was to be completed in a nine-months' period (April 1 to December 31, 1965). A sample of 24 secondary schools was to be included in this study. As the study progressed, however, it was realized that there would be definite values in having a nation-wide sample of schools so that the findings might be more representative of independent study plans in all 48 states of the continental United States. Accordingly an extension of the original Cooperative Research contract was requested and secured to the end that the project was expanded to include a sample of 12 secondary schools in states west of the Mississippi River and lengthened by four months to a termination date of April 30, 1966. The same procedure was followed in selecting both samples of schools. A total of 317 secondary schools in 48 states were identified as having independent study plans in operation. The state department of education in each state was first asked (see Appendix F) to list the schools in the state concerned which had independent study plans defined above. Although telephone follow-ups were necessary in some cases, replies were eventually received from each state department. In only a few states were no schools identified by their state departments as having independent study plans. Because of some skepticism of the principal investigators as to the adequacy of the lists from the state departments of education, other checks were made to develop as complete a list as possible. Thus additional schools were identified from the literature and by competent authorities in some states in which the state department reply listed no or very few schools. The total list of 317 schools is included by states in Apprndix G.

A table of random numbers was used to select the sample, and approximately as many alternates to substitute for schools that might be found upon direct inquiry not to have independent study or not available for inclusion in the study. Not more than three schools were to be selected from any one state. The sample was checked by mail and/or telephone and alternates used as necessary until the cooperation of 36 schools, believed by both their principals and the project investigators to have independent study plans in operation, was secured.

The list of these cooperating schools, by name of school and location, is given in Appendix H.

Preparation of Instruments and Pilot Studies

Arrangements were made as early as possible for pilot studies in three schools: Cocoa Beach, Florida; Coral Gables, Florida; and Evanston Township, Illinois. The principal investigators and the three research assistants employed in the project developed preliminary data-collection forms to be used in the pilot studies, revising the forms after, as well as during the course of, each pilot study. All pilot studies were completed in the late spring, 1965, so that the final drafts of instruments could be prepared during the summer, 1965; cleared, as required by the project contract, with the United States Budget Bureau; and duplicated for use with the entire group of schools in the sample during the 1965-66 school year. The pilot schools were revisited during the year, so that the data secured therein would be comparable with that from other schools, and the pilot schools included in the sample of 36 schools.

A copy of each of the instruments used in the project is included in the Appendix, as follows:

Factual Information on An Independent Study Program (Appendix A)
Interview Guide for Principals and Others (Appendix B)
Interview Guide for Participating Teachers (Appendix C)
Student Interview and Evaluation Guide (Appendix D)
Independent Study in Secondary Schools (Appendix E)

CHAPTER II

CHARACTERISTICS OF INDEPENDENT STUDY PRACTICES IN SECONDARY SCHOOLS

The purpose of this chapter is to identify and categorize the common elements of the independent study practices included in this study, in relation to each of the following items: purposes of independent study, products of independent study, curriculum areas, pupil ability levels served by independent study, types of independent study plans in relationship to instructional organization, teacher activities and needed competencies for independent study, devices used to interest pupils in independent study, and facilities for independent study. The identifications, categorizations, and illustrative statements included in this chapter result from a careful examination of information secured, as described in Chapter I, during the field work in the 36 selected secondary schools of this project.

Purposes of the Plans

The purposes stated by those school personnel involved in independent study programs were examined to determine similarity of content. An analysis of these similarities of meaning resulted in a synthesis of purposes which focuses on curricular content, learning processes, personal-social goals, and organization for individualized instruction. These focal points constitute the four major categories and the corresponding illustrative statements of purposes listed below.

Purposes Which Emphasize Curricular Content

To enrich the student's education in the school

To broaden and deepen curriculum content, thereby overcoming the limitations of the regular school program

To allow the student to expand his personal knowledge about a subject

To provide an opportunity for a depth study of mathematics

To enrich the student's music background

To enable the student to move ahead of the rest of the class

To allow the student to go beyond the regular course materials

To challenge the superior student by offering advanced placement courses

To provide in-depth training as a basis for college specialization

To provide college preparation, in terms of content as well as methods for studying

To learn more about the community in which the student lives

To help inform the student about the functions and problems of local government

Purposes Which Emphasize Learning Processes

To promote the ability in each student to learn how to learn

To help the student learn to think critically and analytically

To encourage the student to reach his own conclusions after his study of a topic of personal interest

To give the student experience in working on his own, with emphasis on improvement of learning skills

To encourage the student to learn to appraise and evaluate printed materials·

To help the student learn and practice library research techniques -- finding materials, writing reports, and presenting the results of research

To help the student learn interview techniques

To train the student for a job as an industrial sewer

To give the student practical experiences in repairing automobiles, thereby preparing him for a job as a mechanic

To provide the student with an opportunity to apply mathematics learnings

To give the student opportunities and experiences in participating in local government

To provide on-the-job training

To give the low-ability student an opportunity to gain needed work experience

Purposes Which Emphasize Personal-Social Goals

To help the student acquire a positive attitude toward learning for its own sake, apart from motivations extrinsic to the learner

To foster independent motivation, thereby helping the student to develop self-reliance

To prepare each student for a successful future of continued learning after he has finished his formal schooling

To promote personal responsibility and self-discipline

To help the student become an increasingly freer and more self-directed learner

To allow the student to explore, enrich, and investigate areas of personal interest

To provide an opportunity for the student who has his own ideas, wants to be heard, and wants to share his ideas with other students and his teachers

To help the student become a producer, rather than a consumer, of learning

To allow the student freedom to be creative, thereby helping to promote individual creativity

To allow the student to investigate different careers, thereby helping him to decide on a vocation

To allow the student to explore and develop career possibilities in mathematics

To give the student an opportunity to see if a career in science is what he really wishes to pursue

To allow the senior student who feels that he may want to become a teacher an opportunity to assist, observe, and participate with an experienced teacher to see what teaching is like

To attempt to solve a labor shortage in the immediate community of work while meeting occupational needs of students

To help provide for the needs -- both personal and financial -- of the low-ability, low-achieving student

To help hold the potential dropout in school, thereby reducing the number of school dropouts

Purposes Which Emphasize Organization for Individualized Instruction

To give time, and patience, to the student so that he can develop his own ideas and approaches to study and learning

To give every student in the school an opportunity to pursue a project or a research study to the best of his ability

To enable the student to pursue an advanced topic at his own rate of progress

To challenge and stimulate the individual student who wishes to pursue, in depth, a topic of personal interest without having to be enrolled in a regular course at the same time

To provide for diagnosing, planning, and remedying individual deficiencies in order to improve basic skills

To help determine how self-sufficient, self-directed, responsible, and self-reliant the young student can become

To make the best use of the teacher's and the student's time during the school day

To overcome limitations of a regular class

To resolve schedule conflicts and/or offer additional courses

To allow the student to gain both added breadth and depth in the same topic or unit under study in large or small instructional groups of which he is a member

To give the student an opportunity to work alone, with a teacher available for advice and counsel

To meet the trend in colleges for more independent study

To offer an opportunity for the student to develop via an approach similar to a university directed-study program wherein the teacher functions as a consultant

To give the highly selected and motivated student an opportunity to work in real operational science laboratories

To give the student an opportunity to work and study with professional members of the community who hold advanced graduate degrees and are specialists in a field of interest to the student

Products of the Plans

Brief descriptions of the products of different independent study plans in the 36 selected secondary schools were supplied by both teachers and students interviewed. A master list of statements about these products was compiled. An inspection of these data served to determine commonalities of descriptions. Lastly, a classification of products as _tangible_ and _intangible_ was the result of the total process of analysis. Separate listings of illustrative tangible and intangible products of independent study plans follow.

Tangible Products of Independent Study

Improvement in varied skills, such as improved reading ability in English, increased proficiency in expository writing, and greater command of a foreign language

School credit for doing independent study work

Increased knowledge

Improved academic performance

Production of school publications, such as a poetry anthology or literary magazine

Written papers and logs, write-ups of experiments, research reports, self-evaluation progress reports, term papers (some in foreign languages)

Oral reports to explain the results of independent projects, the status of on-going experimentation, or one's position in relation to topic being studied by a number of students

Improved work in other fields as a result of having done work in the areas of remedial reading and composition

Higher scores on class examinations

Construction of models for mathematics, architecture, dramatics

Repairing of automobiles in auto mechanics shop

Creative products, construction of displays, art work, musical compositions, literary pieces

Reports and creative writing published in journals read by professionals in special fields or in magazines purchased by the general public

Positive and complimentary evaluations for on-the-job performance

College scholarships, in part the result of having done independent study work

Successful completion of advanced-placement course work and accelerated position in college the following year

School awards for outstanding independent study work.

Intangible Products of Independent Study

Change in attitude toward school -- more positive orientation toward learning

Opportunity to work with highly respected and competent professional men and women

Improved self-concept

Personal satisfaction

A sense of increased prestige in relation to the school community

A sense of accomplishment, with improved feelings of personal worth and adequacy

Intellectual stimulation from work with others of similar ability and interests

Increased power to be successful because of one's own efforts

Increased maturity -- intellectual, emotional, and social

Increased self-reliance and independence

Curriculum Areas in Which Independent Study Is Used

Upon arriving at a school, members of the research staff would have an initial conference with the school principal or a person designated by him who was familiar with independent study in the school. Sometimes additional persons attended the conference. At this time, tentative agreements were reached on the various kinds of independent study programs in the school and with what subject field each might be identified. A few independent study offerings were somewhat difficult to identify by a particular subject area because the programs crossed area lines: vocational homemaking could be classed either as home economics or as a vocational subject. Some projects crossed subject lines, as that of the girl who was doing a reading project in a second language but writing a long paper on her findings in English for an English teacher. Where should a project be assigned which involved programming a computer to develop theorems for a symbolic logic starting with somewhat different assumptions than existing symbolic logics? How should a student be classified who was marking time for college entrance by auditing some high school classes in social science and doing independent reading, whereas his main interest was in mathematics and physics in both of which he was self-taught to the university graduate level?

In addition, some of the reports given the researchers on the number of pupils in independent study were probably generous, often approximate rather than exact. With these qualifications, tabulations were still made and are given in Table 2.1 and Table 2.2. Table 2.1 lists the 36 schools by code letter. After each a mark is recorded if even one student were doing independent study in a subject area. In some schools, there were two, three, or even more different programs of independent study in a single area; however, multiple listings were not made. In one school, for example, independent study projects in language arts related to play production, including taping for radio production; a student in speech working independently toward a ham operator's license, several students doing independent projects, reading literature or history-literature combinations; and one student studying the Spanish novel during a particular period in Spanish, but writing the results in English.

Subject areas in which independent study was found varied from a single area in two of the schools visited (preliminary screening by mail or telephone had indicated that more programs might qualify) to all twelve subject areas in two of the schools. The number of subject area

TABLE 2.1

SUBJECT AREAS HAVING INDEPENDENT STUDY IN 36 SCHOOLS BY INDIVIDUAL SCHOOL

SCHOOL	SUBJECT AREAS												TOTAL
	Eng.	S.S.	Sci.	Math.	F.L.	Fine Arts	Bus. Ed.	Home Ec.	Ind. Arts	Voc. Ed.	Educ.	Phys. Ed.	
A			1							1			2
B	1	1	1	1	1	1	1	1	1	1	1	1	12
C	1		1										2
D	1	1	1			1				1			5
E	1	1	1	1	1	1							6
F			1	1	1								3
G		1		1									2
H	1	1	1	1						1	1		6
I	1	1	1	1	1	1	1	1	1	1	1	1	12
J	1		1		1	1							4
K	1			1									2
L	1	1	1	1	1	1	1	1	1	1		1	11
M	1	1	1	1									4
N		1											1
O	1	1				1							3
P	1	1	1										3
Q	1	1								1			3
R	1	1	1	1	1	1							6
S	1	1	1	1		1							5
T			1		1		1						3
U	1	1	1			1							4
V	1				1	1		1	1				5
W	1	1	1	1	1	1	1	1				1	9
X		1	1	1		1				1			5
Y	1	1		1	1	1				1			6
Z	1		1										2
AA	1	1				1			1				4
BB	1	1	1	1	1	1							6
CC			1										1
DD	1	1	1	1		1							5
EE	1	1	1										3
FF	1	1	1					1	1				5
GG	1		1						1				3
HH	1	1	1	1	1	1	1		1			1	9
II	1	1	1	1				1		1			6
JJ	1	1	1	1		1		1	1				7
Totals	29	26	28	19	13	19	6	8	9	10	3	5	175

programs identified and the frequency with which these were found are indicated in Table 2.2 below. Three subject area programs occurred more often than any other frequency -- in seven schools. Six schools reported five areas, and six reported six subject areas with independent study. For the 36 schools, the median number of independent study subject areas was 4.5; the arithmetic mean, 4.86. The number of subject areas in which independent study was used tended to vary from year to year, according to both observations and reports. When the three pilot schools were revisited, one had almost abandoned independent study, one had kept it constant, and one had increased considerably student participation in independent study.

TABLE 2.2

SUBJECT AREAS HAVING INDEPENDENT STUDY IN 36 SCHOOLS
BY NUMBER OF DIFFERENT AREAS PER SCHOOL

Number of areas		Number of schools
12		2
11		1
10		0
9		2
8		0
7		1
6		6
5		6
4		4
3		7
2		5
1		2
	Total	36

Another way of viewing independent study in an over-all fashion is to see how many teachers and how many students are identified with each subject area in the 36 schools taken together. These tabulations are shown in Table 2.3. Social studies with 2349 participants, has approximately a third more pupils than English (1767), the runner-up. Science (1123) and mathematics (677) follow. Mathematics is placed ahead of home economics, for which 786 pupils are reported, because 62 mathematics teachers are involved against 9 instructors for home economics. Science led in the number of teachers (101) supervising independent study, with social studies (98) next and English (88) third highest. In the ratio of pupils per teacher, home economics was highest, with physical education second, and business education third. The next three places were assigned to social studies, vocational education and English; with individual totals enough alike to constitute a cluster of subject areas. In comparison to other independent study offerings, fewer schools had programs in business education, industrial arts, home economics, and physical education; also, a relatively small number of students were involved in these four subject areas. Three schools had programs which have been listed as "education." This listing includes those pupils functioning as laboratory assistants or acting as cadet or assistant teachers in a program which has been individually planned for the person involved.

The mean number of teachers involved per school was 13.2. The average number of pupils involved in independent study per school was 238. The number of teachers engaged in supervising independent study varied from one or two in a school to those schools in which all or practically all teachers had some involvement with independent study.

TABLE 2.3

NUMBER OF SCHOOLS, TEACHERS, STUDENTS, AND PUPIL-TEACHER RATIOS IN INDEPENDENT STUDY IN 12 SUBJECT AREAS IN 36 SCHOOLS

Subject Area	No. Schools	No. Teachers	No. Students	Pupil-Teacher Ratios
English (speech, drama, reading, creative writing, journalism)	29	88	1767	20.1
Social studies	26	98	2349	23.9
Science	28	101	1123	11.1
Mathematics	19	62	677	10.9
Foreign languages	13	22	207	9.4
Fine arts (art & music)	19	31	265	8.5
Business education	6	9	303	33.7
Home economics	8	9	786	87.3
Industrial arts	9	11	90	8.2
Vocational education	10	15	335	22.3
Education (teaching others)	3	15	15	1.0
Physical education	5	15	667	44.5
Total		476	8584	18.0

Besides the variety of ways in which students in English or language arts were involved in independent study, already presented in terms of a single school, there were also some interesting examples of advanced placement or college level courses in which students did much work on individually planned programs but came together in regular seminars to report on their independent study projects and to share the results of their work in other ways. In one school two groups of college-level English students focused on novelists, poets, and playwrights so that each student made an intensive study of three representative writers, one for each of the three types of literature. Each student was responsible for preparing a summarizing critique on each writer and his work; these essays were duplicated and given to the other members of the seminar. As each of the writers were discussed the person who prepared the corresponding summary acted as teacher for the seminar. Other members of the seminar read at least one major work of each author to be discussed prior to the presentation and discussion.

A variety of independent social studies programs was found. These projects varied from free reading periods in history to intensive study of historical periods for a particular purpose. One Project No. 2969 researcher taped the oral presentation of a student's intensive study of the contrasting ways Hoover and Roosevelt reacted to and dealt with the depression. The student made this presentation to the school principal, the members of the social studies department, and a few other interested teachers. When he had concluded his report, the student submitted to searching questions asked by members of his audience, much as a graduate student faces when he is being examined at the conclusion of his master's or doctoral study. Other interesting examples from social studies were research projects on local government, social conditions, and civic problems.

Independent study in science took many forms. Some schools had developed very successful programs of preparing entries for science fairs on levels from 7th to 12th grade. One entire school system had talented upper-class students working in the community with doctors, professors, engineers, biologists, and others engaged in scientific and engineering research. Another school had a long tradition of noncredit seminar in which students prepared projects for entry in the Westinghouse Science Talent Search. Some of these projects were more mathematical than scientific; for example, one boy worked at extending Gauss's theorem on the density of primes. Still another student, a rather severe spastic, was almost completely self-taught in science and mathematics; and, though barely 17 and not a high school graduate, was already doing both mathematics and physics on a sophisticated university graduate level.

Besides mathematics projects which led to entries in the talent search or to science fairs, students also worked on individual projects which went beyond the material covered in classes: a gifted student might do extended and even original work in the theory of numbers, such as Diophantine analysis. Other students worked through college level courses on their own, with the hope of securing advanced placement. One teacher, in working with a boy who had gone through analytic geometry, reported that it would be possible to handle two to three times as many students as he did in regular classes if they were as self-directing as this student.

At the other end of the scale, some teachers were finding that they could plan individual programs with students, sometimes involving programmed materials suitable to different levels of mastery, and turn failures and potential dropouts into moderately successful students of elementary mathematics.

Foreign language included advanced work in languages either where a course was not offered in the school or where the student was beyond the level at which most members of a class were working. In this case the independent study student planned a reading and study program with the teacher and worked on his own, with feedback to the teacher in the form of written papers, reviews of films and plays, taped materials, and book reports or more involved reports involving wide reading on a topic or problem in the foreign language. A few instances were found of pupils who were pupils who were pursuing oriental or African languages more or less on their own. One boy had spent a summer at Yale, after his junior year in high school, in which he studied third-year college Chinese. He was also learning Japanese. One advanced student was helping two slow learners in a beginning foreign language class, in addition to doing extensive advanced independent reading and study. Charts, illustrations, and research papers on the culture of the language's people are other examples of independent study.

The fine arts include art and music. There is some difficulty in making distinctions between a conventionally well-taught art program and one in which some students engage in independent study. This point of division probably would occur when the student takes over major responsibility for the direction of his own work. Besides the production of works of art in almost all media (drawing, painting, sculpture, ceramics, silk screen work, costume design, architecture, and photography) independent study artists had projects in art history which culminated in illustrated papers. Some projects resulted in a series of slides and accompanying taped lecture material. Other detailed research was done on the qualities and versatility of selected ceramic clays.

A variety of independent activities were found in music. These ranged from independent study of advanced music theory to the development of performance groups, vocal and instrumental, featuring the music and instruments of the 16th Century and before. Along with the study of theory and the performances were original compositions and arrangements, sometimes going all the way to their production by musical groups under the direction of the independent study artist.

While not found in as many schools or in as many other subject matter areas, independent study in business education was still used in a variety of ways. Personal typewriting was learned this way, as well as a high degree of self-instruction in typewriting usually taught in regular classes, sometimes with emphasis on advanced speed and proficiency. Learning about office occupations or learning how to write business letters constituted independent projects. Some examples were found where students learned to operate calculators and other business machines more or less on their own. Diversified occupations and distributive education plans which provided student programs that were individually tailored also should be mentioned here.

Wherever vocational homemaking was found, students had projects which might be listed as independent study. These projects usually involved something to be done in the home, such as decorating, clothing construction, meal planning, preparing and serving food, child care, improvement of recreational facilities, and landscaping. Several students testified to heightened appreciation of families, changed attitudes toward early marriage, and incentive toward career choices as an outgrowth of these experiences.

Industrial arts and vocational education often furnished students with opportunities to attain expertness in a particular skill or vocation. Again, as in art and homemaking, it was not always easy to decide where good class instruction ended and independent study began. Possibly in industrial arts, especially when construction followed individual design of an object, such work could be considered independent. Many examples were found that related to training for an out-of-school job including dental technician, auto-body repairman, machine maintenance man for a garment factory, tractor mechanic, and meat cutter. Art and industrial arts came close together in projects involving architectural design accompanied by the preparation of detailed specifications and the construction of models. A concomitant of some of these programs was that potential dropouts stayed in school, graduating with a fair to good basic education plus a salable skill and a job waiting.

Various examples of cadet teaching were found, including the teaching of remedial reading. (Of interest to reading teachers, perhaps, was the tutors' expressed preference for the phonics approach.) Other students served as laboratory assistants or instructors. Closely related to the teaching projects were childstudy units associated with homemaking classes which involved care of and working with young children.

Independent work in physical education consisted of corrective or remedial work for those with physical or postural defects. While this has long been recognized as an essential part of all good physical education programs, it was reported in only five of the 36 schools which were visited.

Pupil Ability Levels Served

As schools in the sample began to explore independent study, it was usually seen as a way of providing for the very able student. Some examples of this include the county-wide system which had gifted students doing independent research with doctors, physicists, marine biologists, research engineers, and others; the large high school which for many years has had a seminar for contestants in the Westinghouse Science Talent Search project; the high which had gifted social science students explore a problem, write it up, and then defend it before a faculty committee as if it were a master's or doctor's thesis. One or two schools have tried to start out by having all students participate in some way in independent study. Other schools, including some of which emphasized the gifted, have moved into programs geared to the average pupil, to the slow learner, and to the potential dropout.

No attempt was made to get psychological measures on students who participated in independent study. It was felt that it would be somewhat more relevant to get a variety of judgments from teachers, counselors, and administrators who worked with students as to the range of ability of pupils who participated in their respective schools. To gather this information, Section A, "Evaluation of Students Doing Independent Study," of the faculty questionnaire, Independent Study In Secondary Schools, (see Appendix E) was completed by 300 persons from the 36 schools. The instructions for Section A follow:

Please evaluate the group of students who are participating in this program of independent study in relation to all other students in the same grades in your school.

(continued)

Beneath each of the items which follow is a numbered scale. Please place check (✓) marks at two points along the line to indicate the range within which the independent study students would fall.

EXAMPLE:

Ability to accept responsibility

(1)-----------(2)----------✓(3)---------✓--(4)-----------(5)
Least Able Average Most Able

In this illustration, the range of students doing independent study is checked as from just below to somewhat better than average, in their ability to accept responsibility.

Check marks were coded to represent numerical ratings to the nearest 0.1 on a scale ranging from 1.0 to 5.0 and punched on IBM cards. Arithmetic means were calculated for minimum and maximum ratings for these eight groups: (1) principals, directors, assistant principals, and department chairmen; (2) foreign language teachers; (3) language arts and humanities teachers; (4) mathematics and science teachers; (5) remedial, developmental and special areas teachers; (6) social studies teachers; (7) vocational areas teachers; (8) all unclassifiable respondents. These means were computed for the preceding eight types within schools, for all respondents for each school, by types for all schools, and for all respondents from all schools. The composite ratings by type and for all respondents are given in Table 2.4.

The 17 items checked include qualities or behaviors in which independent study students might be compared with pupils in regular classes. With reference to some of these characteristics, it is possible that independent study students would develop at a faster rate than other students -- intellectual curiosity, ability to work independently, originality and creativity, for example; development of other

TABLE 2.4

EVALUATION OF 9416 STUDENTS DOING INDEPENDENT STUDY BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES*--ARITHEMETIC MEANS FOR MINIMA AND MAXIMA

		M E A N S									
	Items	All Raters (300)		Type 1 (51)		Type 2 (12)		Type 3 (59)		Type 4 (66)	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1.	Ability to solve problems	3.20	4.32	3.20	4.47	3.47	4.46	3.32	4.43	3.36	4.41
2.	Depth of subject-matter understanding	3.19	4.30	3.25	4.47	3.36	4.39	3.42	4.49	3.34	4.38
3.	Knowledge of subject-matter area(s)	3.17	4.29	3.14	4.40	3.52	4.56	3.20	4.32	3.34	4.37
4.	Skill in locating information	3.15	4.25	3.09	4.36	3.32	4.37	3.26	4.32	3.38	4.40
5.	Ability to work independently	3.22	4.34	3.19	4.48	3.54	4.52	3.31	4.45	3.35	4.41
6.	Intellectual curiosity	3.28	4.37	3.27	4.44	3.26	4.30	3.46	4.52	3.52	4.52
7.	Originality and creativity	2.99	4.14	2.95	4.17	2.91	4.04	3.22	4.26	3.08	4.28
8.	Resourcefulness in experimentation	2.98	4.05	2.96	4.19	3.10	4.24	2.99	4.03	3.18	4.30
9.	Ability to budget time	2.93	4.12	2.89	4.17	3.12	4.31	2.91	4.10	3.06	4.27
10.	Dependability, regularity, punctuality	3.33	4.42	3.29	4.45	3.49	4.41	3.46	4.43	3.40	4.51
11.	Extra-curricular school activities	2.99	4.14	2.90	4.33	3.24	4.31	3.32	4.36	3.02	4.23
12.	Acceptance of leadership	3.03	4.18	2.95	4.34	3.74	4.72	3.09	4.27	3.16	4.26
13.	Interest in school	3.32	4.41	3.28	4.54	3.71	4.68	3.39	4.44	3.48	4.50
14.	Satisfaction from learning	3.38	4.45	3.24	4.45	3.97	4.92	3.49	4.53	3.59	4.58
15.	Accuracy of self-appraisal	3.04	4.14	3.06	4.21	3.45	4.32	3.17	4.22	3.14	4.32
16.	Personal and social adjustment	3.01	4.28	2.99	4.36	3.25	4.15	3.06	4.28	3.12	4.39
17.	Goal orientation beyond high school	3.31	4.38	3.35	4.50	3.45	4.29	3.38	4.47	3.47	4.48

(continued)

TABLE 2.4
(continued)

Items	MEANS							
	Type 5 (13)		Type 6 (35)		Type 7 (43)		Type 8 (21)	
	Min	Max	Min	Max	Min	Max	Min	Max
1. Ability to solve problems	2.60	3.77	3.24	4.39	2.75	3.77	3.37	4.52
2. Depth of subject-matter understanding	2.67	3.78	3.13	4.23	2.75	3.88	3.18	4.42
3. Knowledge of subject-matter area(s)	2.61	3.74	3.30	4.34	2.75	3.91	3.29	4.49
4. Skill in locating information	2.56	3.75	3.09	4.27	2.83	3.76	3.17	4.36
5. Ability to work independently	2.95	4.02	3.23	4.41	2.91	3.91	3.18	4.40
6. Intellectual curiosity	2.75	3.90	3.13	4.40	2.90	3.89	3.44	4.55
7. Originality and creativity	2.69	3.77	2.99	4.17	2.62	3.69	3.13	4.38
8. Resourcefulness in experimentation	2.55	3.50	3.07	4.12	2.57	3.47	3.05	4.11
9. Ability to budget time	2.50	3.48	3.04	4.24	2.63	3.75	3.29	4.39
10. Dependability, regularity, punctuality	3.26	4.49	3.51	4.54	2.92	4.05	3.40	4.60
11. Extra-curricular school activities	2.92	3.95	3.12	4.41	2.45	3.34	2.92	4.04
12. Acceptance of leadership	2.55	3.90	3.13	4.31	2.70	3.57	3.06	4.25
13. Interest in school	3.23	4.37	3.47	4.55	2.70	3.82	3.65	4.61
14. Satisfaction from learning	3.03	4.20	3.40	4.54	2.89	3.94	3.54	4.59
15. Accuracy of self-appraisal	2.73	3.86	3.08	4.24	2.65	3.55	3.01	4.30
16. Personal and social adjustment	2.94	4.29	3.07	4.39	2.75	3.87	2.96	4.44
17. Goal orientation beyond high school	2.56	3.92	3.39	4.40	2.83	3.95	3.70	4.72

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

qualities might be inhibited by being involved in independent study -- breadth of subject-matter knowledge or participation in extra-curricular school programs. It should be remembered that the ratings bracket the group of students, participating in the particular program, with whom the rater was familiar in relation to all other students in the same grade or grades in the school. Since abilities are known to vary widely not only from person to person but also from grade to grade and among schools, it is apparent that the minimum in one school, even though checked at the same place on the scale, is not necessarily equivalent to the minimum in another school. Likewise, maxima marked at the same point would have different meanings from school to school. Having made this qualification, a study of Table 2.4 indicates that the means for minima of the composite of all raters are approximately at or above the middle of the scale for each of the 17 items. Means for maxima vary from 4.05 (item no. 8: resourcefulness in experimentation) to 4.45 (item no. 14: satisfaction from learning). Similar results hold in six of the eight breakdowns by types. Only the 13 remedial and special teachers of Type 5, and the 43 vocational teachers go appreciably lower. Hence in the opinions of a high proportion of the 300 staff members polled, most independent study students are in the top half of the students in their respective classes and schools.

When individual reports and types within schools are examined, the same trends are usually found, though with a somewhat greater frequency of both lower and higher ratings. As these reports are studied in detail, there seems to be some regression effect with teachers in Types 5 and 7. Their evaluations on the forms seem to be a little more generous than their oral statements. Likewise, they may tend to give the researchers answers they feel are wanted or answers they feel are objectives they should be achieving. (For example see items 10, 13, 14, and 16 for remedial students, and the same ones for vocational students.)

Finally, these are teachers' opinions of how things are. They are not an endorsement for limiting independent study to pupils rated above average on the 17 traits evaluated.

Types of Independent Study

This project served as an incentive for a related research study, conducted by James D. Wells (1966), which aimed to describe those students engaged in independent study in the 24 selected secondary schools east of the Mississippi River. The primary focus of the study is on the expectations and expressed satisfactions of students who have been involved in a variety of independent study plans. The 10 distinct types of independent study plans delineated by Wells are of significance to this chapter. The types of independent study plans described below were determined by him on the basis of personal observation of independent study plans, an examination of data collected for USOE Cooperative Research Project No. 2969, and an analysis of information supplied by students on the "Fact Sheet for Independent Study Students." (See Appendix I.)

Ten Types of Independent Study Programs in Secondary Schools
As differentiated, defined, and compiled by James Douglas Wells

1. Some released time given from a regular class so that some students may work independently on individually planned studies in addition to class assignments.

2. Some released time given from a regular class so that some students may work independently on individually planned studies in lieu of class assignments.

3. Seminar groups which are smaller than ordinary classes in which students work independently, at least part of the time, on common or individual topics, units, or problems.

4. Individually planned program of curricular study with regularly scheduled time to study independently, in or out of school, with a minimum of teacher direction and supervision.

5. Independent study as part of a program of instruction organized around large- and small-group instruction.

6. Individual extra-curricular enrichment study with students working independently before or after school, or on weekends (school facilities open mornings, nights, or weekends).

7. Vocational or work experience programs of instruction in which students work independently, in or out of school, so that they will develop salable skills.

8. A curricular program which emphasizes the development of student responsibility in regard to the individual's use of regularly offered independent study time. Subsequently, one of the objectives of the school's instructional program is developing the independent, self-directed learner.

9. A regularly scheduled class in the school's instructional program which normally requires that students work independently (e.g. school publications, advanced courses in art, industrial arts, music, etc.) as individual members of a regular class.

10. A regularly scheduled class in the school's instructional program which provides all students with some independent study time in order to accomplish a long-term class assignment, required of all members of the class but which may be individually planned in terms of the specific topic or problem studied.

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Teacher Activities and Needed Competencies for Independent Study

Logically and historically, teacher education programs have been based on the belief that teachers with specific professional responsibilities need special types of pre-service experiences. In relation to this project, then, Ernest L. Bentley (1966) has begun an investigation which will sample and collect systematically the opinions of the teachers and administrators involved in independent study programs in the 36 selected secondary schools surveyed for USOE Cooperative Project No. 2969.

A special opinionnaire, Teachers of Independent-Study Students: Responsibilities and Preparation, (see Appendix J) was constructed. To develop the most comprehensive listing of responsibilities and pre-service experiences of teachers of independent study students, a number of approaches and sources for obtaining information were employed:

1. The members of the research staff for Project No. 2969 were asked to list the responsibilities of teachers of independent study students, based on personal interviews and observations conducted by each of the researchers.
2. The answers to relevant questions included in the interview guides of USOE Cooperative Research Project No. 2969 were analyzed to determine additional items of significance.
3. A content analysis of the student opinionnaire (see Appendix K) constructed by Wells (1966) and discussed in the preceding section of this chapter, was conducted to discover other pertinent items.
4. Literature related to independent study programs and teacher preparation was perused for data which suggested still other opinionnaire entries.

Critical inspection of all items by informed and knowledgeable professionals established the internal validity of the final instrument.

A sample of teachers of independent study students in a Florida secondary school was utilized to test for the reliability of the opinionnaire.

The items in Part I, "Responsibilities of Teachers of Independent-Study Students," were designed to determine the responsibilities of teachers of independent study students in secondary schools. These responsibilities were categorized as follows: "Curriculum Planning for Independent-Study Programs," "Selection and Assignment of Independent-Study Students," and "Instructional Activities of Teachers of Independent-Study Students." Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent-Study Students," was designed to determine needed preparatory experiences for teachers of independent students in secondary schools. In both parts of the instrument items were designed to elicit the beliefs held by experienced teachers of independent study students and administrators of independent study programs in the 36 selected secondary schools of this project. Specifically, respondents provide a measure of the strength of their beliefs, in relation to each item, by selecting one of four positions on a value-scale. (See the instructions on page 1 of the opinionnaire, Appendix J.)

Devices to Interest Pupils

As in the case of the products of independent plans, already discussed in a previous section of this chapter, the devices or incentives used to interest pupils in independent study were described by independent study personnel in the 36 selected secondary schools. On the basis of an analysis of the data provided, a system of classification of incentives was possible. The resulting category of tangible devices and the category of intangible devices are illustrated below.

Tangible Devices Used to Interest Pupils

General publicity about their independent study work in brochures, pamphlets, and newspapers of the school and the school's community

School credit which can be earned by doing independent study work

Nomination of students to do independent study by teachers and other members of the staff associated with independent study plans

On-the-job training experiences as well as chance to earn a salary

Opportunity to study advanced subject matter

Examples of work done by former students involved in independent study

Opportunity to create products which may be displayed and published

Experience in assisting or teaching, as well as observing, a class of students

Opportunity for student-teacher conferences and counseling

Smaller classes

High quality of teachers assigned to independent study -- those with special educational backgrounds, personal interest, and enthusiasm

Recognition by the school and community by way of award assemblies, special meetings, special presentations of independent study work

Opportunity to engage in advanced placement studies and earn advanced college position after high school graduation

Intangible Devices Used to Interest Pupils

Pressure to do independent study work felt by the student and applied by parents, teachers, and peers

Freedom for acceleration and personal enrichment

Prestige earned by being associated with a special program in the school and the corresponding publicity about the program and the products of a student's independent study work

Attractiveness of the opportunity to be independent -- whether in terms of doing independent research of a scholarly nauture working in school-related fields of study in the community in cooperation with specialists, or participating in a work-experience or on-the-job training program

Special privileges and liberties other students do not have, such as being free to leave the campus to work at the city or college library and not being required to spend study-hall periods on the school campus

The significance of having been selected to participate in the school's independent study program

The opportunity to choose topics for study of personally interesting content without relation to regular class assignments or course syllabi

Decreased emphasis on grades with more attention given to learning for one's own sake and according to one's own unique methods

Facilities for Independent Study

Independent study students must have access to more extensive facilities than are ordinarily available to learning programs oriented to group instruction. In order to assess the adequacy of traditional resources such as school libraries, the availability of newer media such as teaching machines, tape recorders, and individual audio-visual carrels, and also how well these facilities were used, 300 faculty members completed Section B, "Evaluation of Provisions for Independent Study," of Independent Study in Secondary Schools. These responses were coded numerically and transferred to IBM cards. The adequacy of facilities was estimated by circling one of the letters E S L M N which ranged over "Very adequate" to "Does not apply." A frequency distribution was made of responses. Modal responses were determined for each of the 12 items listed by rater types in individual schools, by all raters of each type combined, and by all raters combined. Use of facilities was rated from "Excellent," 5; to "Poor," 1; "Missing," 0; or "Does not apply," N, which was excluded from calculations. Means were determined for each of the 12 items by each rater type in the school, by all raters in each type, and by all raters combined. The over-all results of both adequacy and use are reported in Tables 2.5 and 2.6. Frequency distribution data appear in Appendix L.

The case studies of individual schools provided an informal check against the checklist summaries in that the case studies were based in part upon interviews with administrators, participating teachers, and independent study pupils. Members from each of these groups had opportunities to comment on the facilities used in the different independent study programs and their adequacy, as well as desirable facilities needed but missing. In general these interview responses tended to corroborate the checklist results. The interviews, however, gave some additional information. In many of the schools visited, out-of-school facilities (such as public and college or university libraries; hospital, industrial, and college laboratories) provided valuable supplements to school facilities and made possible many independent study activities otherwise difficult or impossible to offer.

It is not surprising that there is a sharp division between the mode of 4 by combined raters, indicating moderately adequate provision, and the mode of 1, indicating provision is not desirable and does not apply, since some facilities are necessary for almost all areas while others fit one or two specializations, such as foreign languages or remedial programs which use language laboratories and teaching machines.

School libraries most consistently were assigned high scores by all types of raters. The interviews indicated that many schools had good to excellent general collections of library materials; but they

TABLE 2.5

RATINGS OF ADEQUACY OF FACILITIES FOR INDEPENDENT STUDY BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES* -- MODAL RESPONSES**

Facility	All Raters	MODES							
		Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8
	N=300	51	12	59	66	13	35	43	21
1. School library	4	4	4	4	4	4	4	5	4
2. Classroom library	4	3	2.5	2.5	3	3	1	4	2.5
3. Departmental resource center	4	3.5	2.5	3.5	2	3	2	4	2
4. Science laboratories	1	4	1	1	4	1	1	1	1
5. Language laboratories	1	5	5	1	1	1	1	1	1
6. Study rooms	4	4	4	3	4	1	4	1	3
7. Individual study or work spaces	2	3	2	2	3	2	2	4.5	4
8. Teaching machines	1	1.5	1	1	1	3	1	1	1
9. Tapes and recorders	4	4	4	3.5	1	3.5	4	1	4
10. Records and phonographs	4	4	4	4	1	3	5	1	3
11. Microfilm and projectors	4	2	1.5	4	4	1	3.5	4	2
12. Variety of reading improvement devices	1	4	1	1	1	3	5	1	1

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

**Code to responses
5--very adequate provision or use is made
4--moderately adequate provision or use is made
3--very limited provision or use is made
2--provision or use is missing but needed
1--provision or use is not desirable or does not apply

TABLE 2.6

RATINGS OF HOW WELL FACILITIES ARE USED FOR INDEPENDENT STUDY MADE BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES*--ARITHMETIC MEANS**

		M E A N S								
	Facility	All Raters	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8
		N=300	51	12	59	66	13	35	43	21
1.	School library	3.52	4.02	3.25	3.60	3.55	3.58	3.69	2.74	3.38
2.	Classroom library	2.10	2.28	1.73	1.73	2.26	2.33	1.47	2.68	2.28
3.	Departmental resource center	2.01	2.58	1.60	1.95	2.15	1.91	1.56	2.06	1.33
4.	Science laboratories	2.29	3.87	1.50	1.28	2.74	1.11	1.69	1.60	2.00
5.	Language laboratories	1.52	2.68	2.80	1.00	1.04	1.00	1.26	1.43	1.07
6.	Study rooms	2.29	3.23	2.36	1.90	2.31	1.11	2.58	1.87	1.59
7.	Indivudual study or work spaces	2.32	2.79	1.91	1.93	2.27	1.64	2.16	2.85	2.50
8.	Teaching machines	1.09	1.11	0.27	0.96	0.97	2.27	1.17	1.47	0.69
9.	Tapes and recorders	2.47	3.44	3.08	2.63	1.34	2.91	2.56	2.19	2.63
10.	Records and phonographs	2.43	3.21	2.67	2.80	1.13	2.55	2.84	2.03	2.84
11.	Microfilm and projectors	2.00	1.93	1.00	2.08	1.92	1.50	2.60	2.39	1.39
12.	Reading improvement devices	1.90	2.83	0.90	1.80	1.51	3.10	1.78	1.68	1.47

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

**Code to responses
5--excellent
4--very good
3--good
2--fair
1--poor
0--missing
N--does not apply (not included in calculating $\overline{X}$)

suffered from lack of work space for students and, as might be expected, were inadequate in the highly specialized materials needed for some independent study projects. While classroom libraries had an over-all rating of "moderately adequate," only the vocational teachers rated them this well among the eight types. Social studies teachers were completely dissatisfied with this resource. Departmental resource centers which had an over-all mode of 4 fared slightly better than classroom libraries when rated by the eight types. Except for mathematics and science teachers and vocational teachers, moderate satisfaction was expressed with tapes and recorders, records and phonographs. Science laboratories, language laboratories, teaching machines, and reading improvement devices received approval only from specialized areas. Principals, directors, and other administrators were consistently very satisfied with facilities. This may be indicative of broader knowledge of what was available, plus an over-all view of the relevance of these facilities.

Teaching machines seem to have almost no relevance to independent study programs. Only remedial teachers felt that they had relevance, and their modal response was "very limited provision is made." The over-all mode and all other group modes were 1. In making judgments as to how well existing facilities were used, school libraries received an over-all rating of 3.52 on a scale from 5 for "excellent" to 0 for "missing." Obviously there were no "missing" responses for libraries, but this zero rating was marked for some of the other items. Not only did school libraries receive the highest combined rating but, with the exception of vocational teachers, all rater groups judged libraries to be the best used of all facilities for independent study. As a group, administrators gave libraries the top rating of 4.02, followed by the clustering judgments of social studies teachers, language arts and humanities teachers, remedial teachers, and mathematics and science teachers -- all of which tended closer to "very good" than to "good." No other facility received an over-all rating substantially better than "fair." While many other ratings are biased because many of the facilities are less generally useful, it it surprising that classroom libraries and departmental resource centers should receive such consistently low ratings, most often being judged between "fair" and "poor."

Not only were teaching machines viewed as unnecessary for most programs, but their use where they existed received very low ratings. Only remedial teachers, who saw their use as "fair," gave them more than a "poor" rating.

Just as the administrators seemed to view facilities as somewhat more adequate than other groups, so did their judgments of effectiveness of use of facilities average consistently higher than most other groups. The use of school libraries and science laboratories was perceived as "very good." Tapes and recorders, study rooms, and records and phonographs were judged between "good" and "very good." Except for teaching machines which received 1.11, "poor," the remaining facilities were judged to be from "fair" to "good."

Only one other rater type gave any resource more than a 3.00 average; that is, the foreign language teachers who judged the tapes and recorders at 3.08. Language laboratories are apparently less important for independent study and received 2.80, just above the 2.67 given to records and phonographs.

Language arts and humanities teachers seemed to see the school library as the best used resource for independent study. The only other facilities rating above "fair" were records and phonographs, 2.80, and tapes and recorders, 2.63.

Mathematics and science teachers -- possibly a poor combination for some of the ratings -- gave only one rating in addition to libraries which approached "good," this to science laboratories at 2.74, possibly depressed by ratings of mathematics teachers whose independent study pupils apparently use laboratories rarely.

Remedial teachers gave 3.10 to reading improvement devices, 2.91 to tapes and recorders, and 2.55 to records and phonographs. All other facilities had ratings of "fair" to "poor."

Social studies teachers scored the use of records and phonographs, microfilms and projectors, individual study spaces, and tapes and recorders slightly nearer "good" than "fair." With the exception of school libraries, use of all other facilities ranged from "fair" to "poor."

Vocational teachers -- these included teachers of vocational homemaking -- did not give any facility a rating of 3.00 or above. Only individual work spaces, school libraries, and classroom libraries approached 3.00. Other facilities had scores from "fair" to "poor."

It would seem that the most important single facility for independent study in almost all areas is an adequate library. The new media, including newer developments in educational technology, seem to have had only a modest impact on the independent study student.

CHAPTER III

EFFECTIVENESS AND PROBLEMS OF INDEPENDENT STUDY

How good is independent study? Should it be expanded? What are the obstacles to independent study as it now exists and to the spread of independent study?

One of the goals of the present study was to collect some evidence on each of the above questions, evidence which might indicate answers or suggest hypotheses whose testing through future research would provide answers. What evidence bears on these questions? The research team sought several kinds of evidence:

1. Any systematic studies or evaluations made by individual schools
2. Analysis of the appropriate sections of the opinionnaire sections with forced choice responses
3. Content analysis of open-ended responses on the opinionnaire
4. Analysis of interview data from administrators, teachers, and students

Studies by the Schools

Few systematic studies of the outcomes of independent study have been made by the schools who participated in this project. Probably the most comprehensive study found was that of Jackson and others (1959, 1960, 1961) at the University High School, Urbana, Illinois, referred to earlier.

If a goal of an independent study program is that of preparing students for college, graduate, and professional work in a field, then some systematic records of evaluation have been kept by the coordinator of the Dade County, Florida, Young Scientists' Laboratory Research Program. After 6 years of the program, an unpublished follow-up study of March, 1964, indicated that:

1. A total of 151 participants had graduated from high school.
2. Of those 151 students, 124 were attending college, 13 had graduated, and 14 were not attending college.
3. Of the 13 college graduates, 5 were in medical school.
4. Of 68 college scholarships, 59 were in effect, 1 had expired, and 8 were lost.
5. Of the 124 then attending college or graduate school, 115 were in science or mathematics.
6. Of the 13 college graduates, 11 were taking advanced courses.

Other evidence collected by the coordinator of the project included scientific papers published; statements of the Ph. D.'s, M. D.'s, and others working with the high school students; the continued willingness of these professional research persons to work with the program; the statements of the students, themselves; and the testimony of their regular high school science and mathematics teachers.

While it is rare to find this much systematic evidence collected, it would still be possible to strengthen a study of this type if control students could be found for those who entered this program and individual progress followed through college and into professional and graduate schools. Ideally, a pool should be selected from which part of the students would be assigned randomly to the Young Scientists Laboratory Research Program and the rest of the students would serve as a control group. Would as high a proportion of the control group get college scholarships? Would the same proportion pursue science, mathematics, engineering, and medicine? Would the same proportion continue into graduate school? How would their academic achievement compare with that of the experimental group?

A few of the schools in the study had regular evaluations done by staff, by students, by parents, or by a combination of two or three of these. The University of Chicago High School modified its program from year to year based upon student and staff evaluations. These include weekly team conferences, paper-and-pencil evaluative instruments developed by the staff, analysis of data supplied by pre-punched IBM option cards, teachers' logs, and subjective estimations of qualified staff.

Some of the goals of the Flint Central Community High School program are to hold the potential dropout in school, to give students teaching experience, and to graduate students with salable skills. The dropout rate has been reduced. Again, whether this might have been achieved as well by something besides the Personalized Curriculum Program and the Work Experience Program is not known. The Cadet Teaching Program has been a good recruiting device with many of those students who went through it now regular teachers in the Flint schools. The auto service graduates are highly sought after by the automobile companies and repair shops.

Other evidence of successful programs is such outcomes as finalists in the Westinghouse Science Talent Search or in regional, state, and national science fairs. One school had 8 of all 48 Westinghouse finalists enrolled in its independent study programs the previous year.

Students and parents have responded positively in their evaluation of the first year of independent study at Salina Kansas, High School. Favorable judgments by many students, teachers, and parents have led to the growth of independent study in some of the other schools.

Despite these occasional attempts to build systematic evaluation into some of the programs, most schools have not done much to check on the extent to which the goals of their independent study programs have been realized.

Judgments of Independent Study: Values

Expressed Values: Staff Members

The opinionnaire, Independent Study in Secondary Schools, included a section of nine items, refined from a set of items used in the pilot schools, labeled "Values of Independent Study." Respondents could circle 0, 1, 2, or 3 depending upon whether they thought the item was "of no value," "of little value," "of moderate value," or "of great value" in relation to independent study. An attempt was made to obtain responses from teachers in each curriculum area offering independent study, as well as to obtain responses from one or two administrators in each school. A frequency distribution of these responses is given in Appendix M. The results are summarized for all raters and by rater types in Table 3.1 by arithmetic means, and in Table 3.2 by rank order of item means. Seven of the nine value items were rated "of great value" by more than half the respondents. Value items most often rated 3 were Item 5, "provides for needs and interests of the individual," Item 1,"develops independence, responsibility, self-direction," Item 3, "allows study of

TABLE 3.1

VALUES OF OUTCOMES OF INDEPENDENT STUDY AS JUDGED BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES*--ARITHMETIC MEANS OF RATINGS**

OUTCOME	MEANS								
	All Raters N=300	Type 1 51	Type 2 12	Type 3 59	Type 4 66	Type 5 13	Type 6 35	Type 7 43	Type 8 21
1. Develops independence, responsibility, self-direction	2.84	2.88	2.92	2.90	2.76	2.85	2.94	2.73	2.81
2. Provides opportunity for study under optimum conditions	2.34	2.38	2.33	2.30	2.28	2.67	2.34	2.33	2.40
3. Allows study of topics beyond the regular curriculum	2.83	2.94	2.58	2.88	2.89	2.38	2.91	2.69	2.71
4. Permits maximum use of instructional resources	2.52	2.59	2.27	2.47	2.66	2.50	2.57	2.41	2.33
5. Provides for needs and interests of the individual	2.85	2.88	2.92	2.91	2.85	2.92	2.71	2.80	2.81
6. Increases achievement in the special area	2.72	2.82	2.58	2.70	2.73	2.85	2.54	2.76	2.71
7. Raises level of performance in other areas	2.05	2.21	1.70	2.09	1.94	2.62	2.03	1.95	2.00
8. Improves articulation between high school and college	2.37	2.30	2.36	2.65	2.42	1.91	2.29	2.03	2.63
9. Improves student performance beyond high school: in college, vocational, or technical training	2.63	2.72	2.50	2.67	2.59	2.50	2.53	2.66	2.63

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

**Code to responses:
0--irrelevant, of no value; 1--of little value; 2--of moderate value; 3--of great value

TABLE 3.2

VALUES OF OUTCOMES OF INDEPENDENT STUDY TRANSFORMED TO RANKS FROM RATINGS BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES*

		TYPES							
OUTCOME	All	1	2	3	4	5	6	7	8
5. Provides for needs and interests of the individual	1	2.5	1.5	1	2	1	3	1	2
1. Develops independence, responsibility, self-direction	2	2.5	1.5	2	3	2.5	1	3	1
3. Allows study of topics beyond the regular curriculum	3	1	3.5	3	1	8	2	4	3.5
6. Increases achievement in the special area	4	4	3.5	4	4	2.5	5	2	3.5
9. Improves student performance beyond high school: in college, vocational,or technical training	5	5	5	5	6	6.5	5	5	5.5
4. Permits maximum use of instructional resources	6	6	8	7	5	6.5	4	6	8
2. Provides opportunity for study under optimum conditions	8	7	7	8	8	4	7	7	7
8. Improves articulation between high school and college	7	8	6	6	7	9	8	8	5.5
7. Raises level of performance in other areas	9	9	9	9	9	5	9	9	9

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

topics beyond the regular curriculum," and Item 6, "increases achievement of the student in the special area." The means for all raters on these items were clustered between 2.85 and 2.72. The only modal responses "of moderate value" were Item 7, "raises level of student performance in other areas," and Item 2, "provides opportunity for study under optimum conditions." The arithmetic means for these two items were 2.05 and 2.34.

Most items showed much consistency among rater types. This is shown by an examination of ranks across rater types as presented in Table 3.2. Only a few items have appreciably higher or lower means than others rated by the same group. With a 1.70, the lowest mean in the table, the foreign language teachers were modest in their judgments of the extent to which independent study in their area raised the level of performance of students in other subject areas. Remedial teachers did feel that their work was reflected in improved performance in other areas, but they were modest in their feeling about possible improvement of articulation between high school and college. Science and mathematics teachers saw little improvement of performance in other areas as a result of independent study done in the science field. As in a number of other instances, the administrative group gave stronger over-all support to the nine value items than did any other group, with eight of their nine means exceeding the over-all mean. Only on "improves articulation between high school and college" were administrators slightly below the over-all means.

General Evaluation: Staff Members

The final section of the opinionnaire included two open-ended items. Written responses were to be given for each of the following:

1. Briefly explain why you feel that independent study plans should be expanded or curtailed in your school.

2. What is your general evaluation of independent
   study in your school?

Although all respondents did not answer both questions, the responses were given two kinds of content analyses. First, responses were rated from 1 to 5 depending on the degree to which the respondent (1) wanted curtailment or expansion of the program, (2) supported it, and, in terms of the second question, (3) the strength of his positive or negative general evaluation of independent study in his school. Means for each rater type and all types together were calculated for each school and all 36 schools combined. These means are listed in Table 3.3. On the question of expanding or curtailing independent study, strongest support for expansion, 4.70, was given by the 13 remedial teachers in the sample, followed by the 51 administrators with 4.51. The 12 foreign language teachers took the most conservative position, 3.60. The over-all mean was 4.22.

Raters were somewhat less enthusiastic in their over-all evaluation of the programs of independent study, as indicated by the general mean of 3.59. Again the remedial teachers were most enthusiastic, giving the program 3.80; the administrators second, with 3.76; closely followed by vocational teachers, with 3.73. The unidentified group lagged, with 3.06.

A second content analysis was made of the 249 teachers and administrators who could be identified, categorizing their responses as administrators or as teachers and as favoring expansion or preferring curtailment. Over-all, 84 percent favored expansion; 98 percent of the administrators and 82 percent of the teachers took this position. While both endorsements were enthusiastic, a chi-square analysis indicated a significant difference between the two groups at the .001 level. A similar analysis

TABLE 3.3

JUDGMENTS OF 300 RATERS FROM 36 SCHOOLS ON OPEN-ENDED QUESTIONS ON EXPANSION-CURTAILMENT AND GENERAL EVALUATION OF INDEPENDENT STUDY BY ALL RATERS COMBINED AND BY 8 RATER TYPES* --ARITHMETIC MEANS OF CONTENT ANALYSIS BY CATEGORIES**

		TYPES							
QUESTION	All Raters N=300	1 51	2 12	3 59	4 66	5 13	6 35	7 43	8 21
1. Expand-curtail	4.22	4.51	3.60	4.27	4.02	4.70	4.26	4.25	3.88
2. General evaluation	3.59	3.76	3.36	3.68	3.45	3.80	3.56	3.73	3.06

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

**Code to responses
5--strong support
4--some support
3--neutral
2--critical, curtail
1--very critical, curtail

A content analysis was made and the above code represents how responses were categorized.

for the various subject groupings varied from 78 percent for language teachers to 92 percent for social studies teachers, but these differences were nonsignificant.

Another content analysis categorized values of indepednent study programs for teachers as reported in the open-ended statements. Listed by 13 administrators and 21 teachers were such things as "personal satisfaction," "an opportunity to do curriculum planning that has some meaning," "a chance to experiment," "a good source of self-evaluation," and "a better way to use more resources." Personal satisfaction was mentioned by more than half of the respondents in this grouping.

Sixty-nine of the respondents named values of independent study for students in addition to the nine on which they had given specific ratings. The values mentioned and their respective frequencies given in parentheses were "motivation" (18), "self-expression" (12), "adaptability" (8), "teacher-pupil interaction" (7), "integration of knowledge or subject areas" (8), "cultural growth" (8), "self-discipline" (4), and "parent interest" (4).

Expressed Values: Students

In a companion study, Wells (1966) examined the responses of selected independent study students in 24 of the 36 schools included in USOE Project No. 2969. The research attempted to define the goals students had for participating in independent study and the extent to which these goals were achieved. Wells used chi-square and variables of age, sex, grade level, subject area, type of program, and number of semesters in independent study to find out if any of these variables influenced expectation. Thirty-one possible goals were listed. Besides stating whether or not these were goals prior to entry into the program, Wells asked for a rating of the extent to which students thought their goals were being achieved through independent study. Mean values were calculated for these responses by total and according to categories, corresponding to the six variables just listed. Analysis of variance was employed on each item to see whether or not there were significant differences among responses for each item by categories under the variables listed. Although Wells had not completed all proposed analyses at the time this report for Project No. 2969 was being prepared, the following compilation was made for possible comparison with his own data.

General Evaluation: Students

The values which are summarized below, were obtained from a reading of responses to question 10 on the student interview guide (see Appendix D) from all 36 schools surveyed. The number in parentheses following each value indicates the frequency of the response. Data were collected by researchers of Project No. 2969 who personally interviewed students participating in an independent study program.

Student Interview Data

It helps you learn to understand the basic things (the why's) for yourself and learning to learn on your own. (51)

It gives you a feeling of personal responsibility for such things as budgeting your time and meeting deadlines. It develops personal initiative, stick-to-it-iveness, determination, and self-reliance. (215)

It increases personal knowledge understanding and skills, i.e. research, mechanical and technical writing, for further academic study or career -- vocational preparation. (223)

It helps you to become an authority or specialist in a particular phase of a subject, and to know things other students don't know. (20)

It helps you to gain insight into your own capabilities and interests. (14)

It increases your ability to discriminate among topics to see priorities, and to make choices and set your own goals. (92)

It gives you an opportunity to prepare for and do college-type study and work. It gives advanced placement credit and helps prepare for college. (149)

It allows the student to proceed at his own rate of speed and to move to higher and more advanced levels of study more rapidly. (69)

It allows for study of and experience with new ideas. It provides opportunities to survey and gain information about possible career choices. It opens up "new worlds." (54)

It gives students much personal satisfaction. It stimulates interest in and makes the topic or subject more enjoyable. It eliminates the boredom and monotony of school. (85)

It allows the student to evaluate world situations, current events, as they arise. (3)

It helps students gain better access to and insights about teachers and administrators. (37)

It gives more and better personal help with and access to learning materials. Students in independent study are given special privileges and commensurate prestige. (21)

It provides time for gaining skill in reflective and critical thinking. (9)

It gives students an opportunity to understand better their own natural environment, both physical and social. (22)

It gives the student an appreciation of parents and family. (1)

It gives students an opportunity to express themselves before a group. (18)

It helps students become more skilled in working with other people, improving human relations with both peers and adults. (50)

It provides students with the opportunity for working with "top" skilled men in the student's field of interest. (9)

Judgments of Independent Study: Problems

A set of possible problems of independent study was developed and used in preliminary form as part of the opinionnaire, Independent Study in Secondary Schools, used at the pilot schools. These problems were modified into seven items for inclusion in the revised opinionnaire. (See Appendix E.) Respondents could circle 0, 1, 2, or 3. Hence, each of the listed items was judged to be a problem of from "irrelevant" to "very serious" in nature. A frequency distribution of responses for all raters is given in Appendix N. Means were calculated over-all, by rater types, and for individual schools. The over-all means and the means by rater type are reported in Table 3.4.

Expressed Problems: Staff Members

There was not as much spread as might have been expected, either among the severity of problems or among differences in severity as indicated by raters of the eight different types. The only item which clearly achieved the status of "a problem," with a 2.01 rating was Item 4, "offering adequate amounts of instructional time, services of teachers, special programs within the class schedule framework, day to day and week to week." Except for the vocational teachers who gave it a mean of 1.62, all other rater types had means of 2.00 or slightly above. Second rank among the problems went to Item 2, "offering more positive, constructive help to the interested but underachieving student." Administrators gave this item a mean of 2.16, compared to the over-all mean of 1.87. The administrators' mean was one of the two highest of any rater type on any of the seven items. Just as the administrators were somewhat more enthusiastic about the values of independent study, so were

TABLE 3.4

PROBLEMS OF INDEPENDENT STUDY AS JUDGED BY 300 STAFF MEMBERS IN 36 SCHOOLS BY ALL RATERS COMBINED AND BY 8 RATER TYPES*--ARITHMETIC MEANS OF RATINGS**

	M E A N S								
PROBLEMS	All Raters N=300	Type 1 51	Type 2 12	Type 3 59	Type 4 66	Type 5 13	Type 6 35	Type 7 43	Type 8 21
1. Finding efficient means for identifying and selecting students who can benefit most	1.62	1.67	1.50	1.52	1.65	1.31	1.69	1.57	1.95
2. Offering more positive, constructive help to the interested but underachieving student	1.87	2.16	1.83	1.91	1.80	1.83	1.80	1.64	1.90
3. Ensuring continuity of learning experiences throughout the special program at all levels	1.54	1.76	1.33	1.45	1.50	1.31	1.80	1.38	1.47
4. Offering adequate amounts of instructional time, services of teachers, special programs within the class schedule framework	2.01	2.08	2.00	2.10	2.02	2.00	2.03	1.62	2.20
5. Achieving uniformity in the program to permit evaluation and continuity	1.52	1.54	1.90	1.42	1.52	1.50	1.68	1.49	1.38
6. Providing adequate counselling of independent study students	1.66	1.71	1.90	1.60	1.75	1.27	1.97	1.32	1.71
7. Providing teachers who are comfortable in the role of directors of independent learning	1.58	1.96	1.33	1.34	1.50	2.18	1.49	1.52	1.60

*Type 1--principals, directors, and other administrators
Type 2--foreign language teachers
Type 3--language arts-humanities teachers
Type 4--mathematics and science teachers
Type 5--remedial, developmental, and special teachers
Type 6--social studies teachers
Type 7--vocational teachers
Type 8--all unclassifiable teachers

**Code to responses:
0--irrelevant, of no value; 1--of little value; 2--of moderate value; 3--of great value

they more sensitive than other groups of raters to the problems of independent study. In all seven instances their means exceeded over-all means. Of least concern over-all were Item 5, "achieving uniformity in the program to permit evaluation and continuity," with a mean of 1.52, and Item 3, "ensuring continuity of learning experiences throughout the special program at all levels," with a mean of 1.54. Foreign language teachers dissented on Item 5, with a high mean of 1.90; and social studies studies teachers had some feeling that Item 3 was a problem, rating it 1.80. Vocational teachers had almost no strong feelings about problems, with their means running from 1.32 to 1.64.

General Evaluation: Staff Members

Another method of assessing problems was to make a content analysis of the open-ended items. Each problem mentioned which did not duplicate clearly one of the seven scaled items, in the preceding section of the opinionnaire, was tabulated according to administrative grouping and according to curriculum area of each teacher involved. Separate tabulations were made for teacher problems and for student problems.

Problems related to teachers were listed spontaneously 140 times, compared with 79 suggested problems related to pupils. In both instances there was considerable consistency between administrators and teachers and among teachers by curriculum areas. Administrators listed 40 out of the 140 problems for teachers and 14 out of the 79 problems mentioned for pupils.

Problems of schedules were mentioned most often -- 31 times -- followed closely by 30 listings of the need for teacher planning-time. Administrators mentioned this problem only twice. Inadequate or improper preparation of teachers was named 24 times as a source of trouble. Eighteen persons mentioned the desirability of somebody in charge of independent study who could direct the over-all program. Twenty persons, 14 teachers and 6 administrators, thought that evaluation of independent study programs needed attention. Ten principals and one teacher mentioned the resistant attitude of some teachers as a block to independent study; six teachers and no administrators thought that administrator resistance was a problem.

The need for more or different resources was mentioned 47 times by teachers and administrators as the most serious problem for independent study students. Lack of space, another hindrance, was mentioned 20 times. The need for students being given more adequate direction was listed 8 times. Four teachers thought that students were penalized by missing out on group experiences while concentrating on independent study instead.

Over-all Survey of Problems

An additional list of problems was compiled from the 36 case studies, which were prepared by researchers after visitations in the selected schools. Teachers' expressed problems, administrative concerns, and personal observations of the researchers constitute the data which were collected in anecdotal form, drawn from memory, and obtained from responses to interview guides. Though not necessarily the result of interview-guide questions, the items reported are those believed to be pertinent to the study of independent study programs in the 36 selected secondary schools.

Problems from the case studies constituted a master list of some 27 different items. Frequency distributions were made for repeated mention of problems appearing in the 36 case studies. Grouping, based on identified similarities, resulted in the following broad problem categories: teacher time and workload (2 items), student preparedness (6 items), finances, facilities and materials (5 items), mechanics (5 items), and program acceptance (9 items). A delineation of specific problems within each category is given below.

Specific Problems Categorized

Teacher Time and Workload

1. Insufficient time for teachers to work with independent study (13)
2. Teachers would prefer independent study become a part of their work instead of in-addition-to (4)

Student Preparedness

1. Difficult to get teachers to admit not-so-talented students to independent study (9)
2. Identifying sets of skills, attitudes and behaviors that will develop the self-directed learner (5)
3. Too many required courses for students to be able to participate in independent study courses (4)
4. Teaching for independence: providing opportunities to learn how to use option time (2)
5. Lack of student understanding as to aims of the program (2)
6. Lack of knowledge about how much independent study junior high school students should take part in (1)

Finances, Facilities, and Materials

1. Insufficient spaces (11)

2. Need for financial assistance to help defray expenses involved in development of new material (6)

3. Difficulty of having on hand all the materials needed for various programs (4)

4. Making better use of community resources and facilities (1)

5. Keeping materials up-to-date (audio-visual and books) (1)

Mechanics

1. No coordinator (6)

2. Inordinate amount of time devoted to administration of schedule (3)

3. Lack of flexibility in scheduling (3)

4. Need to have definite independent study period within each student's schedule (1)

5. Accepting student criticisms as valid in evaluations (1)

Program Acceptance

1. Limited number of faculty interested in program (9)

2. Lack of communication among independent study teachers: sharing of ideas, problems, and the like (6)

3. Confusion that seems to attend grass-roots innovations (5)

4. Keep atmosphere of innovation alive once a change is made so that the new does not become traditional and rigid (3)

5. Teachers feeling students need to be in class (3)

6. Finding staff members who can work with independent study students (3)

7. So many visitors coming to look at program, personnel cannot get work done (1)

8. Getting responsible state agencies to allow credit for independent study courses (1)

9. Maintaining staff morale despite schedule difficulties (1)

Several problems listed by the project research members in the case studies were duplicates of those in the opinionnaire problems given in Table 3.4. Prominent among these were scheduling; lack of centralized responsibility for the independent study programs; tradition-bound teachers resistant to change; need for additional materials, resources, and facilities; evaluation; and feeling that students' time was better spent in group experiences.

Present in the case studies, absent in the previously reported groups of problems, were items relating to adequate financial support of independent study programs, teacher time and workload, ability levels of students to be admitted to independent study, special orientation and instructional preparation needed by students before entering independent study, and gaining acceptance and support for the programs from school and community.

Items that were most frequently mentioned as problems in the case studies were these: insufficient time for teachers to work with independent study (13), insufficient spaces (11), limited number of teachers interested in independent-study programs (9), difficulty getting teachers to admit not-so-talented youth into independent study (9), lack of coordination (6), needed financial assistance (6), lack of communication among independent study teachers (6), and identifying sets of skills, attitudes, and behaviors that characterize the development of the self-directed learner (5).

Agreement as to the type of student who can benefit from independent study, how much time he can afford to work apart from groups, and the placement of responsibility somewhere (at some grade level and at planned time intervals) in order to introduce, instill, and inculcate the skills seen as vital to successful participation in independent study programs were considered to be problems. The idea that only the very exceptional student can justifiably do independent study was related directly to the difficulty of getting teachers to admit not-so-talented students to independent study programs. The limited number of students involved in independent study, the emphasis given to I. Q. score as a screening device, and the disregard of average and below average students as independent study participants were reported as problems. Students' ability levels, the amount of time each student was to spend in independent study, and the prerequisite skill preparation were considered total staff problems.

Very negligible teacher turnover, adequate planning time when directing independent study was additional to a teacher's regular class work, and reduced class size were mentioned as crucial to a successful program of independent study at the secondary school level. When insufficient allowance was made in a teacher's workload to compensate for the additional time required for working with independent study students, teachers often expressed dissatisfaction with the school's program of independent study. Teachers gave a wide range of estimates on the number of independent study students for which an instructor would be responsible in-lieu-of and compared to a regular class enrollment. In general, however, teachers indicated that the number of independent study students per class period should be between 8 and 15. Also, instructors preferred that independent study work be computed as a part of their regular teaching load.

Better communication among teachers involved and with other staff members not involved was reported as a prerequisite. Sharing ideas, problems, and enthusiasm was seen as essential. The limited number of teachers in the school who are interested in working with independent study students seemed to be related to poor communication, as well as to insufficient time for additional assignments without relief elsewhere in a teacher's over-all work schedule.

CHAPTER IV

A DEFINITION OF INDEPENDENT STUDY IN SECONDARY SCHOOLS AND ITS UNIQUE PATTERNS

As stated in Chapter I, Project No. 2969 aimed to result in -- rather than start with -- a comprehensive definition of independent study, with special reference to secondary schools. Many factors have been considered by the principal investigators in arriving at a studied definition: the uses of the term, as employed in the literature (see Chapter I) and in the schools included in this study; the characteristics of independent study practices in these schools (see Chapter II); and our own theory of independent learning and its direction, as developed before and in the course of this project. On these bases we submit the following definition of independent study as an assumption on which our analysis of unique patterns is presented in this chapter, as well as our proposals for further needed research in Chapter V:

> Independent study is considered by us to be learning activity largely motivated by the learner's own aims to learn and largely rewarded in terms of its intrinsic values. Such activity as carried on under the auspices of secondary schools is somewhat independent of the class or other group organization dominant in past and present secondary school instructional practices, and it utilizes the services of teachers and other professional personnel primarily as

resources for the learner.

The nature and scope of independent study, as just defined, may be explained by reference to the investigators' classification of unique patterns of independent study. This classification has been made by analysis of the many independent study plans and practices reported in Chapter II. In making this analysis we sought, in reading once again the detailed reports prepared by the project staff members from visits to each of the 36 schools, to identify patterns of independent study plans with reference to the criterion of uniqueness; that is, we tested various classifications of the many plans until we arrived at classes or patterns that seemed discrete and unique and still within our concluding definition (see above). These classes (that is, unique patterns) are seen as follows:

Independent Study Privileges or Option

A pattern in which independent study as defined above is optional, although encouraged and facilitated by scheduled time, for a large number of students in some category -- even the entire student population. Examples from Project No. 2969 to be described later in this chapter include: the Independent Study Privileges arrangements at the Shoreline, Washington, High School and the William F. Fleming High School, Roanoke, Virginia; the independent study schedule arrangements at the Valley High School, Las Vegas, Nevada, the Oak Glen High School, New Cumberland, West Virginia, and the Chippewa Valley High School, Mt. Clemens, Michigan; the OPTION Program of the Freshmen Project at the University of Chicago, Illinois, Laboratory High School; and the Science Fair Program at the Victoria, Texas, High School.

Individually Programmed Independent Study

A pattern in which each member of some designated group is guided individually (but not tutored individually, as in tutorial instruction for achieving some norm) in planning and conducting a program of independent study related to his particular learning needs. This pattern frequently, but not necessarily, utilizes programmed instructional materials. Examples from Project No. 2969 (see below) include: the Remedial Reading at the Bassett, California, High School; the Reading Program at the Easton, Pennsylvania, Junior High School; the Remedial and Developmental Reading at the Wisconsin Heights High School, Mazomanie, Wisconsin; Corrective Gymnastics at the Wilmington, Delaware, High School; Geometry: Contract Independent Study at the John F. Kennedy High School, Silver Spring, Maryland; Self Study: Programmed and Regular Course (11 different credit courses) at the Cocoa Beach, Florida, High School; the Personalized Curriculum Program at the Flint, Michigan, Central Community High School; and the Accelerated Reading at the Washington and Lee High School, Arlington, Virginia.

Job-Oriented Independent Study

This pattern focuses independent study, as we have defined it, on preparation for a particular job, vocation, or career. It includes as examples from this project: the Laboratory Research Program at the Coral Gables, Florida, High School; the Cadet Teaching at the Flint, Michigan, Central Community High School; the Government Internship at the Shaker Heights, Ohio, High School; the Industrial Sewing Design at the Camden, South Carolina, High School; the Laboratory Assistants and Creative Writing at the Shoreline, Washington, High School; the Vocational

Agricultural Mechanics and Vocational Horticulture at the Amphitheater High School, Tucson, Arizona; the Industrial Cooperative Training at the Victoria, Texas, High School; and the Furniture Construction at the University City, Missouri, High School.

Seminars Based on Independent Study

In this pattern the seminar is more than a class by this name. Instead, a group of individuals are engaged in independent study, as defined here, coming together frequently for sharing of their readings, projects, or research findings. Examples from the project to be described below are: the Chemistry Seminar at the Wilmington, Delaware, High School; the Seminar 12 (Social Studies) at the Miami, Florida, Senior High School; the English Honors (12th grade) at the Evanston, Illinois, Township High School; the Advanced Problems in Science at the University High School, Urbana, Illinois; the Humanities at the Andrew P. Hill High School, San Jose, California; and the Advanced Level Courses at the New Hampton School, New Hampshire.

"Quest-Type" Programs for Development of Special Aptitudes

This pattern includes a variety of independent study activities, as we defined them here, for students who work almost completely on their own in the exploration, extension, and refinement of special talents, aptitudes, and interests not necessarily related to career choices (as in the Job-Oriented Independent Study). Examples to be described here are: the Independent Quest in English, Language Arts, Speech and Drama, at the Amphitheater High School, Tucson, Arizona; the Depth Studies in Aquatic Research at the Lincoln High School, Stockton, California; the Quest Study (14 different elective subjects) at the Cocoa Beach, Florida, High School; the Independent Study: Individual Topics at the Salina, Kansas, High School; the Independent Study--American History (grades 11 and 12) and Mathematics (grade 11) at the Half Hollow Hills High School, Huntington, New York; the Independent Study in History, English, Mathematics, and Science at the Middletown High School, Middletown, New York; the Independent Study in American History (State Pilot Program) at the Earl L. Vandermeulen High School at Port Jefferson, New York; the Junior Engineering Technological Society, at the A. C. Flora High School, Columbia, South Carolina; the Social Studies Independent -- Level One at the Dalewood Junior High School, Chattanooga, Tennessee; the Original Community Research (Dogtown Project) at the George Wythe High School, Richmond, Virginia; the General Biology at the Littleton, Colorado, High School; the Independent Research--Term Papers at the Benjamin Franklin Senior High School, New Orleans, Louisiana; and the Advanced Science at the Beatrice, Nebraska, High School.

Independent Study Privileges or Option

Shoreline, Washington, High School

This school's program of Independent Study Privilege began by releasing certain students from traditional, supervised study halls to work without supervision in the library, resource centers, independent study areas, classrooms, and laboratories. This year over 700 of the 1730 students in the school have been given independent study privileges. The students are selected by faculty members according to ability to work independently. Grades and popularity are not considered. Students make written application for an independent study card in order to be relieved of the obligation of attending supervised study hall. Students approved for independent study privileges are given guidance and counsel in terms of the opportunities provided by and the individual responsibilities associated with independent study privilege. Periodic meetings with these students continue to reinforce the earlier orientation to independent study.

William F. Fleming High School, Roanoke, Virginia

This program is aimed at increasing student responsibility. Students apply for what is called an Individual Responsibility Card. They may be turned down if any teacher reacts negatively to the application. If the individual student is approved, he receives the card and is allowed free movement around the school campus to areas such as the library, laboratories, and publications rooms, providing he is carrying on school work.

Valley High School, Las Vegas, Nevada

At this school the scheduling is computerized to provide for a daily schedule of flexibility based on 22 modules of 20 minutes each, with the end of each module marked by one minute of music instead of the sound of a bell. Each pupil's schedule includes time for independent study; that is,time not scheduled for either large- or small-group instruction or other group activity. In general, each student has from 15 to 30 percent of his school day available for study which may be done in the Main Learning Center, in one of the Resource Centers (social studies, English, mathematics, science, or business), in one of the Laboratories (home economics, industrial arts, science, art, music, reading, or physical education), or in the "Luncheteria." The latter is furnished with four-man tables, and it is generally regarded as a place for socializing and "breaks," rather than for study. However, it may be used for study and planning by duets, trios, or quartets of students. The schedule for students is designed so that the 11th grade students have more independent study time than 9th graders, and so that the more able students have more unscheduled time than the less able.

Oak Glen High School, New Cumberland, West Virginia

One unique characteristic at this school is that 30 percent of all students' time is unassigned. During this time, students are allowed to work on anything they select, such as the independent research projects which all students are required to do during each of their three high school years. Students seek out the teacher of their choice to advise and guide their research. This program touches all persons in the school -- all 35 teachers and all 710 students.

Chippewa Valley High School, Mt. Clemens, Michigan

This program covers all subject areas in the curriculum. Furthermore, students are allowed to study subjects not offered by the school providing the student can obtain a teacher as his independent study advisor. All students, except freshmen, as well as all teachers, are eligible to participate. Students are free to elect Independent Study in any course offered in the regular school curriculum, preferably in a subject which is being studied in a regular classroom situation. At this time, no criteria such as grades or I. Q. are being used for determining which pupils do independent study. Out of a student body of 535, 116 students are participating under the guidance of 22 teachers out of a total staff of 25½. Time for independent study is regularly scheduled at the rate of 70 minutes, 4 times per week; and work is done in the library, independent study rooms, empty classrooms, music practice rooms, laboratories, shops, back-stage area, and the like.

University of Chicago, Illinois, Laboratory High School

Independent learning and self-directed study are fostered via the Option Program of the Freshman Project. On Thursday of each week students spend time according to choices they have made the previous Thursday from a "menu-like" list of offerings composed of activities to be conducted by teachers (from all departments and levels within the school) who have the time available to make a special presentation, to direct students in exploration of unusual or enrichment-type activities, to provide student experiences in the fine arts, to conduct drills and reviews in basic freshman courses, to be available for student-teacher conferences, and to let their rooms serve as silent-study areas. A design has been developed in which student decision-making in regard to degree and kind of independence desired and choice of time, space, and materials is made possible to the extent that complex scheduling and subject-matter commitments will allow. Students are gradually moved into the Option Program. Two freshman-level teaching teams help construct the option-menu to provide choices of two basic types which meet the individual needs of the somewhat-dependent and the very-independent learner, according to his needs at different times in the year and in regard to different areas of study. One day per week, then, students at the Freshman level choose or opt their work for the whole day. They may go to subject areas other than those of their regular courses of study, to the library, to the library annex to work on skills and use audio-visual materials and equipment,or to a variety of laboratories. With the approval of a student's homeroom teacher, changes in options are permitted between the time the student makes his choices and the forthcoming Thursday. A system of pre-punched IBM cards is used for scheduling the option-day activities and for supplying data that are analyzed and made available to students and teachers as feedback for purposes of self-evaluations.

Victoria, Texas, High School

The largest independent study activity in this school is that of preparing for science fairs. Preparation of this type is done by pupils on all grade levels in the school; each year, from 250 to 300 students complete science fair projects. Often these projects are done without relationship to the science class in which the individual is involved. In the past, many of the projects have been biology, chemistry, physics, or another advanced science. Recently, a more direct connection has been made between independent projects and a student's class work. Sometimes a student develops an interest and works with the same teacher for more than one year, even though he may not be in class with that teacher. Some of the work is done in school, some is carried on at home, and some is conducted in industrial and hospital laboratories of the city.

Individually Programmed Independent Study

Bassett, California, High School

In this program of remedial reading, groups of students use materials of graded difficulty, working on their own and at their own rate of speed.

These students are in the bottom groupings according to the results of reading tests. Pacing equipment and the Craig Reader are utilized. A teacher aide is in charge of taking attendance, helping students find materials, and the like.

Easton, Pennsylvania, Junior High School

Independent, individualized instruction in reading is both developmental and corrective in nature. Corrective reading is provided for students who are reading below grade level; developmental, for those reading at grade level but who wish to improve their reading skills. The high-level reader is placed in small seminar-type groups for study of such topics as writing style and content of mature, advanced reading material. Students often work alone, pacing themselves through an individualized program of study worked out by the teacher and the individual student.

Wisconsin Heights High School, Mazomanie, Wisconsin

Developmental and remedial reading is provided for students at all grade levels. Special materials and equipment are available in the reading laboratory. Students may elect to work in the laboratory during free time in the modular schedule in use at this school, or they may be assigned to reading improvement work by English teachers. It is the reading teacher who makes decisions about progress and continuation in laboratory work. Both basic and advanced reading skills are emphasized to meet the objectives of remediation and acceleration.

Wilmington, Delaware, High School

Corrective Gymnastics is offered as a course of individualized instruction wherein each student, in a clinic stiuation, does individual exercises to correct functional deviations. Students are recommended by a doctor, nurse, gym teacher, or parents. Approximately 140 students working with two teachers participate one period per day in specially equipped exercise facilities.

John F. Kennedy High School, Silver Spring, Maryland

In this contract-type study of geometry, students decide how they want to learn the material and the degree to which they will work completely on their own. Usually, students use text materials and other supplemental aides, check their own answers to exercise problems, and take end-of-chapter tests on their honor which are turned in for grading. Members of this program are nominated by teachers or may elect to be included. On the basis of evaluation of students by the four-member mathematics teaching team, these students are allowed to elect to learn geometry on their own rather than attend regular class.

Cocoa Beach, Florida, High School

Self Study, in this school's program, is usually done in lieu of regular classes as far as attendance and class work are concerned. However, in come cases it involves covering the same material that would have been studied had such a course been offered. Using either programmed text materials or standard classroom texts and materials, students proceed to cover a subject area at individual rates. Students work in the library or in other available spaces. Grades are often based on oral or written tests and are given at the end of the year by the student's supervising teacher who works under the direction of the school's Quest Coordinator. Besides giving students the opportunity to develop self-discipline and initiative, as well as more freedom in determining their own needs, this program provides for remediation and acceleration not possible in regular classes.

Flint, Michigan, Central Community High School

This program has 150 students enrolled and involves 14 teachers and 2 counselors. The program's objectives are to hold potential dropouts in school. All subject areas are included, and the emphasis is given to maintaining small classes of 15 students in order to provide maximum opportunity for individualized instruction. Students are selected for the program by teacher and counselor referrals because of poor attendance, achievement, attitude, and lack of adjustment to school. Much personal and group counseling takes place both for social-emotional and employment-academic reasons. Students are encouraged to participate and become involved in school activities, such as ushering for events held in the school auditorium and directing traffic in the school parking lot. Classes in this personalized curriculum program are offered to cover the subjects in the regular school curriculum, but they are taught by the best and most experienced teachers on the staff. The primary purpose is to hold the potential dropout in school. Simultaneously, attention is given to teaching the student basic academic skills, introducing him to employment possibilities, and preparing him to return to regular school classes.

Washington and Lee High School, Arlington, Virginia

The Accelerated Reading course makes use of SRA materials and emphasizes reading for meaning. Each period of reading work involves a

10-minute vocabulary study as well as individual work on speed reading. Students elect to be members of the course. The supervising teacher helps to set up individual programs for the students, but each person works in the reading laboratory without close supervision.

Job-Oriented Independent Study

Coral Gables, Florida, High School

The Laboratory Research program is county wide and began in 1958. Students are assigned to both public and private laboratories to work with Ph. D.'s or M. D.'s in a science field of special interest to each student. All of the participants must work a minimum of 6 hours per week and are released from school in the afternoon to travel to and work in the laboratory. The amount of school-released time varies from student to student. One science teacher acts as the program's coordinator who, working with other science and mathematics teachers, selects students on the basis of academic achievement, teacher recommendations, personal interest in science, attitude, and general maturity. The results of experiments conducted by the students are presented in writing or built into science fair projects; however, written reports of progress are required every 6 weeks. Participants are supervised informally by the director of their work who is the scientist in the laboratory to whom they are assigned. The science teacher coordinates the students' work in the laboratory.

Flint, Michigan, Central Community High School

The Cadet Teaching program is designed to acquaint senior students with the teaching profession and enlists the cooperation of teachers at all grade levels. Each of the high schools in the district has a sponsor of the program who coordinates the students' activities and, along with school counselors, selects students for the program. Each participant elects this type of field or laboratory work. The course covers a block of two hours time to allow for transportation to and from schools in which students have been individually placed.

Shaker Heights, Ohio, Senior High School

This program is a club activity more than a regular offering. It is an outgrowth of a program whereby students, one day each spring, assume leadership positions in the local city government. Feeling ill-prepared to carry out their duties, the students requested and organized the Government Internship to help them better understand local government as well as understand the specific responsibilities and duties of the local governmental officials. Students volunteer for the program and work with two social studies teachers and local governmental officials during after-school hours in school facilities as well as city hall chambers.

Camden, South Carolina, High School

In Industrial Sewing Design, pre-job training is provided for about 50 students in grades 10, 11, and 12. Instruction is given on 10 different types or kinds of machines used in local garment-making industries. A local firm provides the machines. Because of a shortage of trained workers, the students are allowed to develop a specialty, whether as an expert on one kind of machine or as an expert in some phase of operation such as machine repair. Training in repair work is usually conducted at a technical school after introductory experience at Camden

High School.

Shoreline High School, Seattle, Washington

The Laboratory Assistants program provides cooperative learning activity for students who work with one biology teacher. Students are selected on the basis of previous performance in science, their interest and their ability to prepare the laboratory for a class, supervise students in the laboratory, maintain equipment, organize and prepare projects for display, and assist in teaching. Students who are assistants are supervised by the biology teacher during the class period and via occasional after-school conferences.

The Creative Writing program gives students opportunity to write manuscripts on their own. One teacher works with 20 students. Participants use a variety of approaches for exploring and presenting their feelings and perceptions in the form of different types of literature, including poetry, drama, and the short story. Furthermore, some attention is given to writing as a career or avocation. One day per week the group meets as a class for planning; two days are used for independent work in the library, resource center, outdoors, or on field trips; and one day is reserved for group meetings to read and discuss the results of individual writing efforts.

Amphitheater High School, Tucson, Arizona

This pilot program, Vocational Agricultural Mechanics and Vocational Horticulture, is subsidized by the Arizona State Department of Education. Approximately 10 boys are involved in each of these, and each student works with a separate teacher. The participants spend one hour per day in class and laboratory at the school and about 15 hours per week outside the school. The individual nature of the work is made possible by the out-of-school aspects of this program. The agri-mechanics students work with different farm equipment dealers and service persons, learning how to assemble, to use, and to service agricultural machinery, including major repairs. Their experiences are individually planned, and the students go from one type of job to another as rapidly as they learn each phase. Usually, one boy is placed with one firm and is visited by his high school teacher at least once a week. The horticulture students' work is individually planned, and they have held part-time jobs with nurseries, landscaping firms, grounds department at the University of Arizona, public schools, and local motels. In both areas of the program, theoretical study is related to work experience as much as possible.

Victoria, Texas, High School

Industrial Cooperative Training is an offering which covers a number of areas. Pupils take some common instruction but embark on individual, usually unlike projects. Each individual operates almost independently for much of the time, with a teacher available as needed. This program aims at preparing aircraft sheet metal workers, auto body repairmen, carpenters, chefs, dental assistants, dry cleaners, glaziers, meat cutters, nurses' aides, welders, and sheet metal workers. The teacher in charge of the training program recruits students; places them in training stations, for pay, 4 hours per day; schedules them into three regular high school classes; and designs one individualized class, which is related to the job-area of each student. A student may be enrolled in this program for 2 years, if he begins as a junior. Often, potential dropouts are recruited; as a result, they will probably finish school with reasonably good academic training and a salable skill as well. The boy who succeeds in auto body repair will be able to earn from $200 to $300 per week as soon as he graduates. Had he not been recruited, he would probably have been a common laborer, earning about a fourth of this amount or less, providing he could find a job. Selection of students focuses on juniors and seniors who are considered to be socially adjusted and ready for employment. Screening of participants is done by the program director, with the assistance of related-area teachers and school counselors, and is accomplished by way of testing, counseling, and any other means to place students in the most appropriate training positions. Besides working in school facilities, students also work in on-the-job locations in the community with supervision being provided by the employer and the visits of the program director.

University City, Missouri, High School

Furniture Construction is a program designed for students who have successfully completed a year of woodworking instruction. It is designed to be avocational in nature but also prepares students vocationally. Students elect the course and work almost entirely independently on individual projects, with informal supervision and assistance provided by either of two teachers in the wood shop area. Use of the library is also important in relation to the designing and planning of projects. Emphasis is placed on good craftsmanship apparent in the finished piece of furniture -- whether the student aim is vocational or avocational.

Seminars Based on Independent Study

Wilmington, Delaware, High School

The Chemistry Seminar is offered to provide training in special laboratory techniques which involve simple manipulation, leading to the preparation of chemical compounds during the spring semester of the course. The student elects to participate in this program, which meets after school, and is selected by the chemistry teacher on the basis of grades in mathematics, science, and English. A total of eight students are supervised in the school's laboratory as each participant conducts individual experimentation 1 or 2 days per week for a total of about 4 hours' time.

Miami, Florida, Senior High School

Seminar 12 is a class of eleven highly selected senior students who are studying a wide range of topics in the social studies. Students examine different topics according to individual interests; however, there are times when the entire group will be studying a common topic. The class meets 1 period per day, 5 days per week, with activities varying from discussions and presentations to study and library research. Students are selected for this course on the basis of test scores, past performance, and teacher evaluation; then, the approved students are informed and given the opportunity to elect this seminar course, in addition to being enrolled in another regular social studies class.

Evanston Township, Illinois, High School

English Honors 12th Grade includes some 27 students working with 2 teachers. Usually, regular class meetings are held only once a week. The remainder of the students' time is spent on research and independent study in the library, classrooms, and other study areas. Also, during the time released from regular class attendance, students may be involved in conferences with teachers or working in small groups, for presentation of special seminar discussions on the regular meeting day or on additionally scheduled meeting days of the entire group. Students are screened for honors class on the basis of ability, teacher evaluation, and previous performance in the subject area. After being invited to participate, the student elects to be enrolled in the seminar group. There is no direct supervision of independent study, but the teacher is available for conferences during the time the class would be meeting if it were a regularly attended course. Some supervision is also given during student-teacher conferences (at the rate of about once per week), by comments made at the time of seminar presentations, and in regard to statements written on outlines for research and bibliographies submitted by the student. A major aim of the seminar course is to free the student from assignments that he would ordinarily have to do so that he can choose a topic of personal interest and plan with the teacher how he will go about working independently. Within the area of English the student is assisted in becoming a more self-directed learner.

University High School, Urbana, Illinois

In the Advanced Problems in Science course, the student develops his own problem for research in any science field and proceeds on his own, with consultation from a specific teacher who serves as the student's independent study advisor. A rigorous reading program in all areas of science is expected, and each participant submits periodic reports to the teacher in charge of the course. Presentations of the results of research and experimentation are presented by each student during seminar sessions. Besides being nominated by a teacher, students are screened on the basis of past academic record to offer this special opportunity to students with unusual ability in science and for conducting independent work during specially scheduled time. Seminars are held on a biweekly basis, with additional supervision provided by student-teacher conferences, occasional examination or observation of a student's laboratory procedure and technique, and careful examination of written reports. During the single period in the school day which is assigned to this course, students make full use of the school's laboratories, related classrooms, library, and facilities of the university community as well.

Andrew P. Hill High School, San Jose, California

Although scheduled as a course, the Humanities group of 66 students and 2 teachers actually operates in lieu of regular class attendance and homework. Selected materials studied correspond to the University of Chicago Home-Study Course. The students come to class for seminar discussions once a week, having the rest of the scheduled time free for reading and analysis of suggested materials. Each of the instructors is available for conferences and counseling if needed and directs the seminar meetings. Honors students are selected for the course by counselors and teachers on the basis of previous academic performance. The course is aimed at college-level work and is offered as enrichment for highly gifted and good readers.

The New Hampton, New Hampshire, School

Independent study related to advanced level courses is elected by superior students in a variety of subject areas. In some cases, individualized programs of instruction are designed when there is no regularly established course available. In general, 10 to 13 students constitute a class, with each student having been screened on the basis of grades earned in classes in the same subject area, test scores, and personal evaluations by former teachers, the student's counselor, and the Director of Studies. Although most students participating are seniors, qualified juniors also may elect to be enrolled. The burden of achievement lies with the student, and emphasis is given to advanced study of subject-area topics rather than to fundamental skills or the merely technical formalities of the typical, regular course in the same subject. Depth study of problems and topics is achieved via laboratory work, extensive field research away from the school campus, daily participation in seminar discussions, and independent work related to expository and research papers. Learning, for the most part, is self-paced and guided by the instructor who is available for student-teacher conferences on the average of once a day. The very organization of the private community-like boarding school emphasizes seminar arrangements, freedom for students to pursue their own interests in special fields, and arrangement of time and facilities to enhance independent study work.

"Quest-Type" Programs for Development of Special Aptitudes
Amphitheater High School, Tucson, Arizona

Very able students in advanced classes in English, speech, drama, French, and Spanish carry on individual, independent projects. The English and language students submit proposals for study which are approved by a committee of teachers. Then, they spend their time reading and researching a particular topic or area, such as the English

Civil War, the War of the Roses, Nineteenth Century Spanish writers read in Spanish. Each student confers with his teacher, writes progress reports, and turns in a final paper on his independent study work. The drama students select, cast, direct, and produce one-act plays, as well as preparing tapes of dramatic readings. The single speech student involved in this program wanted to get a radio operator's license; her independent work was a study of the necessary material and learning to send and receive coded messages. In each case, the student must submit a proposal for study, and approval is granted after an examination of his past academic performance, test scores, ability, and degree of personal interest in doing independent study. The major purpose of the program is enrichment: to extend student learning experiences, to give the students an opportunity to pursue a problem of personal interest at his own rate and on his own, to provide variety and to overcome the limitations of the regular school program. Usually, independent study of this type completely replaces regular class work and attendance, although it may be done in addition to regular assignments.

Lincoln High School, Stockton, California

Students who are permitted to do depth studies in the area of aquatics work at school and in conjunction with the local aquatic research laboratory. Each of 5 instructors working with 12 students assists in planning each student's course of study and functions as a resource person and an evaluator of student progress. The student elects to do this type of research, but he must obtain teacher approval to be released from regular science class work and attendance. Laboratory experimentation, reading and library research, final written paper, and student-teacher conferences constitute some of the activities associated with the aquatic research program.

Cocoa Beach, Florida, High School

Quest study in 14 different elective subjects is offered for the student who wishes to do independent work of personal interest in a subject area or for the student who has a schedule conflict and cannot gain credit in a desired subject unless taken via independent study. The student must propose a special study plan and arrange for a teacher to act as his quest advisor. During a daily regularly scheduled period, the student conducts his independent study in the school library, laboratories, and other study spaces. A check of student progress is made by the Quest Coordinator to whom the pupil is responsible for purposes of attendance. In turn, the coordinator keeps the student's faculty advisor and other appropriate school personnel informed about each quest student. Expenses for special materials, equipment, and texts are covered by the individual student. At the end of each regular grading period during each semester of quest work, the student receives an S or U rating. Besides an evaluation of written work completed and any test scores, an oral examination is conducted during the last 9 weeks of the semester by the student's quest advisor, the coordinator, and another faculty member. Then, a final letter grade is assigned and credit is given on the transcript for completion of quest study.

Another pattern of quest occurs when a teacher releases a student from regular classroom attendance in order to pursue a special topic of study. The length of time spent in this type of activity is determined by the nature of the project and on the basis of teacher-student planning. The teacher is responsible for assigning a grade to results of quest work, but assistance in supervision is available from the Quest Coordinator. The credit and grade earned are for the regular class in which the student is enrolled.

Salina, Kansas, High School

A 12th grade student with a B average or better may apply to do independent study by submitting a proposal of a topic or project to be investigated. Upon approval by a committee of staff members, including a general advisor and counselors, the student is allowed to use the 6th period of each day to work in school facilities or at home. Coadvisors are selected as resource persons. At the end of the 1st semester, a report session is held which is attended by all independent study students and their parents. During this meeting students outline the topics studied and report the results of their research, thus far. At the end of the year a committee evaluates the quality of the work in the final report which each student is asked to write. An oral examination may be a part of the evaluation, or an oral presentation may be given to a class. From these evaluations, credit of from 0 to 1½ units is earned, and a letter grade is similarly determined. Working with 32 students are 22 teachers, counselors, and community citizens who act as co-advisors along with the 1 teacher who serves as general independent study advisor. The school's library and laboratories, as well as several community college libraries, are used by the students in this program.

Half Hollow Hills High School, Huntington, New York

Independent study in American history and mathematics is designed for the exceptional student who may elect to be absent from regular class up to 3 periods per week in order to pursue a topic of personal interest related to the work of the class in which he is enrolled. In some cases, teacher and student design a schedule of class attendance and independent study work for each week; in other cases, students make their own choices as they see fit. Whatever the arrangement, students are doing independent study at the same time their history instructors are working with the rest of the members of the regular class. The Director of Independent Study confers with students about once a month, and teachers meet with students about every two weeks, when free time is convenient to both. Students are screened for the program on the basis of test scores, teacher evaluations, and counselor recommendations. After being nominated and invited to participate, the student is free to elect membership in the program, which usually results in the construction of demonstrational projects or models (mathematics) and written or oral reports presented to other members of the regular class. Students are held responsible for major tests of the regular class. In most cases, independent study topics covered are very closely related to what is being studied in the regular class.

Middletown, New York, High School

In the areas of history and English (grades 11 and 12) and in the areas of mathematics and science (grade 11), independent study is a program whereby certain students are permitted to work on their own apart from the classroom environment, though not totally independent of the regular classroom teacher. As many as 3 periods of realeased time per week may be used for library research by talented students who wish to pursue study interests of a personal nature. Each student is still responsible for the major work and examinations of the regular class of which he is a member. The aim is not merely independence, but intensive study of a self-selected topic. Screening and final selection of independent study students is done by the Director of Independent Study on the basis of information provided by the guidance department and subject area teachers. Once students have been identified, they are invited to decide for themselves about participating. The results of independent study include written reports, oral presentations to other classes of students studying the same subject, reports of experimentation and research, displays and demonstrations, and seminar discussions for all independent study students.

Earl L. Vandermeulen High School, Port Jefferson, New York

A depth study program of reading in the field of American history is a characteristic form of independent study in this school. As part of a state pilot program, selected students are given released time from regular class in order to do independent study work. A topic of personal interest related to American history may be studied independently in the library and other available study spaces, instead of attending 3 of the 5 weekly sessions of the regular class. In general, the guidance department identifies, screens, and selects students for this type of independent study. Once a student has been selected, mainly on the basis of I. Q. score and achievement record, he decides whether or not to accept the invitation to participate. Discussions based on a student's reading is attempted by teachers during conferences held about once every 2 weeks. Since students are not required to do more than independent reading in the subject, papers and reports are not customary. All independent study in this program is done in addition to regular class assignments and examinations, as well as the New York State Regents Examination.

A. C. Flora High School, Columbia, South Carolina

The Junior Engineering Technological Society is an extracurricular activity in which advanced science students participate. Students elect to construct and use special apparatus in the research projects. Individual experimentation is carried on by most members of the group. Consultants are frequently invited to speak on specialized topics. Members make trips to various competitive events. Enrollment is limited to 40 members, and students are selected by 2 advisors on the basis of grades and 2 teacher recommendations. School laboratories, as well as community facilities, are the major work spaces used by students during the 2-to 3-hour session held once a week. Although this program is not directly associated with any one class, it is the outgrowth of interest in science which has been generated in the regular science program of the school.

Dalewood Junior High School, Chattanooga, Tennessee

Enrichment or depth study of curriculum areas of particular student interest is provided by this school program of independent study in social studies. Referred to as questing, independent study can be elected by the student if he is in the upper ability level and is approved by the directing teacher who makes the final decision on the basis of test scores and a personal evaluation. The main purpose of the program is to provide enrichment for the highly motivated student. Written reports and oral examinations are used to evaluate the work done which is independent and in lieu of the regular class assignments. Students spend approximately an hour each day of the week in the library and conference rooms doing independent study or having their weekly conference with the teacher.

George Wythe High School, Richmond, Virginia

This school opened in 1960. At that time the English department chairman felt that it would be worthwhile to have students know more about the immediate community in which the school was located. As a result, a 5-year project was begun. The results of the total project will be published this summer as the Dogtown report, which receives its name from the fact that the school boundaries closely resemble the outline of a dog's head. Students in this program are members of the 12th Grade Honors English program and are admitted to this research group on the basis of highly selective procedures. Each student is required to report once a month for a student-teacher conference. The major focus of the independent work of this program is learning to do library and social research, to conduct the personal interview for purposes of collecting data, and (especially this last year of the study) to report the results of sociological research. This year-long project is offered as an addition to regular class time and assignments. Besides the information contained in folders assembled by independent study students of previous years, full use is made of school and community resources necessary for completing the final written report of the study. Student recognition for participating in this type of independent study is afforded by way of notation on the individual's transcript and in the final report which will include a list of all participants.

Littleton, Colorado, High School

General biology offered at the 10th grade level provides for independent study by making use of a series of carrels which function as science resource and work centers in the area of botany, microbiology, vertebrate zoology, and invertebrate zoology. All biology students are required to participate in this study of four discrete scientific areas. A teacher and a laboratory assistant act as resource people and conduct demonstrations. Students have reference books and can look up information required for the answers to questions on the student guide sheets. Written reports, experimentation, use of audio-visual aids, and examinations are included in the independent study of each of the biological areas. At the end of an area of study, the students move on to the next carrel location and corresponding topic of investigation.

Benjamin Franklin Senior High School, New Orleans, Louisiana

The independent study program at this school consists of a requirement of three major research papers each year for each student in the school. Functioning as a school whose students maintain very high academic records and possess superior abilities, the school-wide term paper assignments are part of the regular school program; hence, independent study is an integral part of the learning experiences offered. For grades 10 and 11 each student writes a paper for English, social studies, and science; for grade 12 each student writes a paper for English, in addition to a paper in two other courses of his own choice. There is no overall, formal system for the independent term paper work. Each teacher designs his own plan and devises his own method for assigning, supervising, and evaluating students' term paper efforts. The most frequent method is the use of periodic progress reports and occasional conferences with students who request them. Although no formalized method of student recognition has been used, teachers and counselors make note of superior work on independent study projects by inserting a copy of the paper in the student's permanent file.

Beatrice, Nebraska, High School

Students of exceptional interest and ability in science are offered a schedule of 2 hours per week for lecture and 3 hours per week for work in school laboratory facilities and the library. The independent study time of 3 hours per week is devoted to research, investigation, and experimentation related to a topic or problem of individual interest and choice. Approval to participate in this program rests on rank in class, previous science course grades, and teacher evaluation of those students who apply for admission to this regularly scheduled, elective course. Two instructors are available if needed. They hold several conferences with each student, until the individual projects have been determined and are well underway. The primary aim of the course is to give selected students the opportunity to investigate areas of study not covered in regular science classes. Final products of independent work include written reports, apparatus the students have constructed, and presentations of the results of experimentation.

CHAPTER V

SUMMARY, CONCLUSIONS, SUGGESTIONS FOR NEEDED RESEARCH

USOE Cooperative Research Project No. 2969 had two broad purposes: (1) to describe, define, and analyze independent study practices in secondary schools, and (2) to formulate hypotheses and questions about independent study which need further research.

As a first step, a list was compiled of 317 secondary schools which supposedly offered independent study. Sources of the list were state departments of education, articles in educational literature, representatives of professional associations, faculty members in other universities, and public school officials. Random numbers were used to select 36 schools and alternates.

Following work in three pilot schools, later revisited, in which instruments and interview techniques were practiced and refined, 36 schools were visited by one to three members of the research team, for periods of at least 2 to 4 days. Preliminary checking was done by letter and telephone to get permission and to make sure that enough independent study could be found to make the visit worthwhile. Only a negligible number of schools in the sample which had active programs declined our request, and then only because of schedule problems.

One of the first conclusions reached was that independent study is probably more common in educational discussions and literature than it is in the practices of secondary schools. About half of our contacts proved to have so little in progress which met our preliminary definition that a visit did not seem worthwhile. We are doubtful that further work would have added another 100 schools to our list. Of the schools we studied several had relatively modest programs, and a few were doing less than they had done in previous years.

Our original criteria for including a school related to study activities of students in grades 7 through 12. The work of independent study students was to be characterized by the following:

1. Differed from uniform homework assignments, including individualized study assignments
2. Involved studies carried on in school facilities, or in outside facilities by arrangement of teachers
3. Planned individually for each student concerned
4. Received school recognition in the form of course credit or other notation entered on official school records

Five data-gathering instruments were developed and used:

1. Factual Information on an Independent Study Program
2. Interview Guide for Principals and Others
3. Interview Guide for Participating Teachers
4. Student Interview and Evaluation Guide
5. Independent Study in Secondary Schools (an opinionnaire to be completed by principals and independent study teachers)

After each visit to a school, a case report on the school and its program of independent study was prepared, based upon the first four of the instruments listed above. Data from the opinionnaire, Independent

Study in Secondary Schools, were punched on IBM cards and analyzed by individual school, by each curriculum area, by administrators' ratings, and by the total of all 36 schools, using the same breakdown as well as a composite of all ratings. Several content analyses were made of answers to open-ended questions.

Characteristics of Independent Study Practices in Secondary Schools

Characteristics of independent study practices were described under these headings: purposes of independent study plans, products of the plans, curriculum areas using independent study, pupil ability levels served, types of plans in relationship to instructional organization, needed teacher activities and needed competencies, devices used to interest pupils, and facilities for independent study.

Purposes

Scores of purposes were given to the research team: some were very general; some, highly specific. These purposes were abstracted and categorized. Four classes of purposes were identified and all stated purposes seemed to fit one of these categories:

1. Purposes which emphasize curricular content in order to allow the student to expand his knowledge about a subject or to provide for a depth study of mathematics

2. Purposes which emphasize learning processes in order to promote the ability in each student to learn how to learn, to learn to think critically, or to learn interviewing techniques

3. Purposes which emphasize personal-social goals in order to foster independent motivation, to help the student develop self-reliance, or to help the student become a producer -- not just a consumer -- of learning

4. Purposes which emphasize organization for individualized instruction in order to enable the student to pursue an advanced topic at his own rate of progress or to provide for diagnosing, planning, and remedying individual deficiencies in order to improve basic skills

Products

All individuals interviewed were asked to name products of independent study, particularly of the independent study programs in which they were involved. Many outcomes were named. It seemed to the research team that these products could be arranged into two broad categories:

1. Tangible products of independent study which included such things as production of school publications, school credit, improvement in various skills, written papers, oral reports, tapes, slides, models, college scholarships, advanced placement, jobs in a skilled occupation

2. Intangible products of independent study which included personal satisfaction, improved self-concept, improved positive attitude toward school, sense of increased prestige, increased maturity, increased self-reliance and independence

Curriculum Areas Where Used

Independent study programs were found in twelve curriculum areas. With different definitions this number could be made larger. For example, English or language arts includes English, speech,drama, and remedial and developmental reading; foreign languages refers to classical and modern languages, including non-European foreign languages; science covers general science, earth science, biology, chemistry, physics, engineering, medicine, psychology, and others; fine arts encompasses art and music. Hence, the areas under which programs were categorized for this study include: English, social studies, science, mathematics, foreign languages, fine arts, business education, home economics, industrial arts, vocational education, education (cadet teaching and related activities), and physical education.

Within any one of the areas above, from one to a half-dozen different types of independent study might be found. Of the 36 schools studied 2 had only 1 area with independent study, the majority had programs in 2 to 6 areas, and 2 schools had independent study in all 12. The median number of areas per school was 4.5; the arithmetic mean, 4.9.

Independent study in education was used in only 3 schools, but from 26 to 29 of the schools had social studies, science, or mathematics. Involved in independent study in the schools surveyed were 476 teachers and 8584 students. Teacher-pupil ratios varied from 1-to-1 to 87-to-1, with an overall ratio of 18 pupils per teacher involved.

Many projects were found which involved more than one subject area, such as English and social studies, English and a foreign language, social studies and a foreign language, or mathematics and science. Also, many examples were found where pupils were taking independent study in two or more curriculum areas.

Within areas of the curriculum, independent study projects might be organized to enable the student to compete in a national science talent search, to help him gain advanced college placement in a subject, or to provide him with a specialized, salable skill.

Pupil Ability Levels Served

Judgments about the levels of pupil ability are based on these two sources: (1) interview and fact-sheet data, and (2) Section A, "Evaluation of Students Doing Independent Study," from the faculty opinionnaire. This section of the instrument asked teachers to bracket 17 pupil abilities for doing independent study by placing two check marks on a five-point scale. Abilities rated included such things as "ability to accept responsibility," "depth of subject-matter understanding," and "originality and creativity." Arithmetic means, for maximum and minimum evaluations, were determined for these 17 items for each of 8 rater types: administrators, foreign language teachers, language arts-humanities teachers, mathematics and science teachers, remedial teachers, social studies teachers, vocational teachers, and unclassifiable respondees. With occasional exceptions -- remedial and vocational teachers -- these ratings indicated that pupils ranged from just above average to the top or very near the top in relation to all comparable students.

A review of the fact-sheet data and interview material indicated that most of the schools in the sample began independent study as a device for permitting the very able student to do something beyond what he might do in regular classes. These efforts included seminars for English and social studies students, seminars for Science Talent Search contestants, and opportunities to work as graduate assistants with doctors, engineers, and university scientists. A few schools attempted programs which provided all students with an opportunity for independent study. A very few schools used independent study as a way of designing an individualized curriculum, by offering a specialized course to keep a potential dropout in school or by graduating a student with a salable skill. A few schools were also finding independent study to be an economical, effective way to provide remedial work in reading or mathematics. However, the majority of schools definitely catered to the above-average and highly-gifted student.

Types of Independent Study

Another way of categorizing independent study has been developed by James D. Wells (1966) in a study which stems from this project but which is still in process at this time. Working with 24 selected secondary schools east of the Mississippi River, and by studying case-study reports, Wells found that there were ten different administrative arrangements or types of independent study plans in relationship to instructional organization which could be used for purposes of classification. These he listed as follows:

1. Some released time given from a regular class so that some students may work independently on individually planned studies _in addition to_ class assignments.

2. Some released time given from a regular class so that some students may work independently on individually planned studies _in lieu of_ class assignments.

3. Seminar groups which are smaller than ordinary classes in which students work independently, at least part of the time, on common or individual topics, units, or problems.

4. Individually planned program of _curricular_ study with regularly scheduled time to study independently, in or out of school, with a minimum of teacher direction and supervision.

5. Independent study as part of a program of instruction organized around large- and small-group instruction.

6. Individual _extra-curricular_ enrichment study with students working independently before or after school, or on weekends (school facilities open mornings, nights, or weekends).

7. Vocational or work experience programs of instruction in which students work independently, in or out of school, so that they will develop salable skills.

8. A curricular program which emphasizes the development of student responsibility in regard to the individual's use of regularly offered independent study time. Subsequently, one of the objectives of the school's

instructional program is developing the independent, self-directed learner.

9. A regularly scheduled class in the school's instructional program which normally requires that students work independently (e.g. school publications, advanced courses in art, industrial arts, music, etc.) as individual members of a regular class.

10. A regularly scheduled class in the school's instructional program which provides all students with some independent study time in order to accomplish a long-term class assignment, required of all members of the class but which may be individually planned in terms of the specific topic or problem studied.

Needed Teacher Activities and Competencies for Directing Independent Study

In relation to this project, Ernest L. Bentley (1966) has begun an investigation which will sample and collect systematically the opinions of the teachers and administrators involved in independent study programs in the 36 selected secondary schools surveyed for USOE Cooperative Project No. 2969. He has designed a special opinionnaire, "Teachers of Independent-Study Students: Responsibilities and Preparation," (see Appendix J). To develop the most comprehensive listing of responsibilities and pre-service experiences of teachers of independent-study students, a number of approaches and sources for obtaining information were employed:

1. The members of the research staff for Project No. 2969 were asked to list the responsibilities of teachers of independent study students, based on personal interviews and observations conducted by each of the researchers.

2. The answers to relevant questions included in the interview guides of USOE Cooperative Research Project No. 2969 were analyzed to determine additional items of significance.

3. A content analysis of the student opinionnaire, (see Appendix K) constructed by Wells (1966) and discussed in the preceding section of this chapter, was conducted to discover other pertinent items.

4. Literature related to independent study programs and teacher preparation was perused for data which suggested still other opinionnaire entries.

Devices Used to Interest Pupils

Interview material from teachers and pupils served as a source of information for finding out what, if anything, was done to interest pupils in independent study. Often what is done was more fortuitous than deliberate. However, many answers were given and were classified as either tangible or intangible devices.

Tangible devices included on-the-job training experiences with a chance to earn a salary, opportunity to study advanced subject matter, extra school credit earned by doing independent study, and recognition by the school and community by way of award assemblies, newspaper publicity, special meetings, and special presentations of independent study products.

Intangible devices included pressure to do independent study felt by the student and seemingly applied by parents, teachers, and peers; freedom for acceleration and personal enrichment; prestige earned by being associated with a special program in the school; and decreased emphasis on grades, with more attention given to learning for one's own sake and according to one's own unique methods.

The devices listed above are intended to be illustrative; many others were suggested.

Facilities for Independent Study

Teachers and administrators were asked to rate 12 kinds of facilities which might be used for independent study in terms of the need for or adequacy of the facility and also the extent to which the facilities were being used. Over-all ratings were determined as well as breakdowns by each of the rater types previously listed in the discussion of pupil ability levels served. The facilities which were evaluated were these: (1) school library, (2) classroom library, (3) departmental resource center, (4) science laboratories, (5) language laboratories, (6) study rooms, (7) individual study or work spaces, (8) teaching machines, (9) tapes and recorders, (10) records and phonographs, (11) microfilm and projectors, and (12) reading improvement devices. Ratings were checked against interview data.

School libraries consistently received the highest ratings, by all raters combined and by practically all of the eight types of raters individually. Interviews indicated that many school libraries contained good to excellent general collections of materials, often suffered from lack of work space for students, and were usually deficient in highly specialized materials. In a number of schools, public and college or university libraries were indispensable additions to high school collections. School facilities were often supplemented by student access to hospital, industrial, and college laboratories, making possible many independent study projects which could not be offered otherwise.

Most other facilities received ratings between fair and good, but a few were rated from fair down to poor. Language laboratories, reading improvement devices, and teaching machines received low ratings, often by those who might have used them. Apparently educational technology, thus far, has found little or no place in independent study plans.

Effectiveness and Problems of Independent Study

How do those involved feel about the quality of independent study, the desirability for expansion, and the present and future problems and obstacles? To get information on this broad question, the research team sought written reports of any systematic research or evaluations conducted by the individual schools. In addition, analyses were made of the appropriate sections of the opinionnaires, including content analyses of open-ended questions on the opinionnaires and the interview data supplied by administrators, teachers, and students.

Self Studies

One research project was found amont the 36 schools in which experimental and control students had been followed into college, with certain comparisons made. This study was supplemented by other types of evidence as to the extent to which the various independent study plans in the school had achieved their purposes. A second system-wide follow-up type of evaluation was found for a community science apprenticeship program of released time from regular school attendance. A few other reports were received of systematic ways of collecting information from the staff involved, from students, and from parents to provide a basis for judging or modifying the school's independent study programs. However, most schools have done little to determine the extent to which the goals of their independent study programs have been realized.

Expressed Values: Staff Members

Based upon a study of the literature and experience in the pilot schools, nine values of independent study were listed in the faculty opinionnaire each of which was to be rated according to a four-point scale from 0 to 3. Most raters felt that (1) "provides for needs and interests of the individual," (2) "develops independence, responsibility, self-direction," and (3) "allows study of topics beyond the regular curriculum" were of great value in relation to independent study programs. Lowest rating went to "raises level of performance in other areas." The 51 administrators in the sample gave most enthusiastic support over-all, but there was a high degree of consistency among most raters.

Subjected to several content analyses were two open-ended questions which asked for opinions on expansion or curtailment of independent study and a general evaluation of the program in the respondent's school. When responses were quantified on a five-point scale, expansion was endorsed with a 4.22. Strongest support was given by remedial teachers and administrators, and least support came from foreign language teachers. The over-all evaluation was a more modest 3.59, with strongest backing supplied by remedial teachers, administrators, and vocational teachers.

When responses were placed in two categories -- expand or curtail -- 84 percent favored expansion. Favoring expansion were 98 percent of the administrators and 82 percent of the teachers -- from 78 percent of the language teachers to 92 percent of the social studies teachers.

Open-ended questions were also analyzed for additional values. Some of the additional values included "personal satisfaction, " "an opportunity to do curriculum planning that has meaning," "a chance to experiment," and "a better way to use more resources." More than half of the respondents mentioned personal satisfaction. These were values for the teacher. Values seen for the student included "self-expression," "adaptability," "teacher-pupil interaction," "integration of knowledge or subjects," "cultural growth," "self-discipline," and "parent interest."

Expressed Values: Students

The companion study by Wells (see above), assessed differences in expectations for independent study among 31 possible goals according to variables such as age, sex, grade level, subject area, type of program, and number of semesters in independent study. Similar analyses were made of the extent to which expressed goals had been realized. Most of his students were 11th and 12th graders. Differences were found among the 31 items and also within items, according to some of the variables. Both expectations and realization varied most by subject area and type of program.

Responses to student interviews were analyzed and resulted in additional values attributed to independent study by those involved as learners. Some of these were:

> It gives the student opportunity to prepare for and do college-type study and work. It gives advanced placement credit.
>
> It increases the student's ability to discriminate among topics, to see priorities, and to choose his own goals.
>
> It allows the student to proceed at his own rate of speed and to move to higher and more advanced levels of study more rapidly.
>
> It gives the student a feeling of personal responsibility for budgeting time and meeting deadlines. It develops personal initiative, determination, and self-reliance.
>
> It helps the student to understand the basic things for himself -- to learn to learn on his own.

Judgments of Independent Study: Problems

The faculty opinionnaire contained a section in which respondents rated the seriousness of seven problem areas on a scale from 0 to 3. None of the areas received a high proportion of votes indicative of a very serious problem. The only item which clearly achieved the status of "a problem," with a 2.01 rating, was "offering adequate amounts of instructional time, services of teachers, special programs within the class schedule framework, day to day and week to week." Administrators were slightly more sensitive to problems than any of the seven teacher groups.

A content analysis of open-ended responses gave 79 pupil-related problems and 140 faculty-related problems. Most often listed were scheduling problems and finding teacher planning time. Others mentioned included the necessity of providing adequate teacher preparation, the necessity of having a person in charge of independent study, and the necessity of adequate evaluation of independent study programs in the school.

Pupil-related problems included the need for more or different resources, the need for more work-study spaces, the need for more adequate direction, and the need to provide adequate group experiences for those who spend time working independently.

An analysis of the case studies and interview schedules gave another list of problems as seen by school staffs. Some of these duplicated those on the questionnaire. Others, such as the following,were additions to those listed: the need for adequate financial support, the need to make adjustments of teacher time and workload, the need to give attention to ability levels of students admitted to independent study, the need to prepare pupils for doing independent study, and the need for the rest of the school and the community to support independent study.

A Definition of Independent Study -- Unique Patterns

Based upon our investigation of independent study practices in secondary schools, the following definition of independent study is proposed:

> Independent study is considered by us to be learning activity largely motivated by the learner's own aims to learn and largely rewarded in terms of its intrinsic values. Such activity as carried on under the auspices of secondary schools is somewhat independent of the class or other group organization dominant in past and present secondary school instructional practices, and it utilizes the services of teachers and other professional personnel primarily as resources for the learner.

Corresponding to this definition, the several scores of independent study programs surveyed seemed to be encompassed by the following categories:

Independent Study Privileges or Option

This is a pattern in which independent study is optional, although encouraged and facilitated by scheduled time, for a large number of students, even the entire student population.

Individually Programmed Independent Study

In this pattern each member of some designated group is guided individually (but not tutored individually, as in tutorial instruction for achieving some norm) in planning and conducting a program of independent study related to his particular learning needs. This pattern sometimes uses programmed materials.

Job-Oriented Independent Study

This pattern focuses independent study, as we have defined it, on preparation for a particular job, vocation, or career. This preparation may range from a semi-skilled occupation to graduate-level research in an academic discipline.

Seminars Based on Independent Study

In this pattern the seminar is more than a class by this name. It is a situation wherein students engaged in independent study can come together to share their reading, projects, or research findings.

"Quest-Type" Programs for Development of Special Aptitudes

This pattern includes a variety of independent study activities for students who work almost completely on their own in the exploration, extension, and refinement of special talents, aptitudes, and interests not necessarily related to career choices.

A number of programs were described under each of these categories.

Some Conclusions

1. Only a small number of schools are making appreciable use of independent study.
2. Most independent study programs are directed toward the above average student.
3. A few independent study programs are directed toward the slower student. These plans have helped to meet personal, social, and economic needs of such students and have reduced dropout rates.

4. Independent study is being used in practically all curriculum areas.

5. Systematic evaluation of or research on independent study in the individual school is almost non-existent.

6. Overwhelmingly, those with experience in independent study favor it and feel it should be expanded. Administrators are almost unanimous in their support.

7. Problems do exist, especially in terms of space, teacher and student schedules, financial support, attitudes of nonparticipating teachers, and teacher preparation for directing independent study.

8. Administrative or instructional arrangements for types of independent study have been classified.

9. The initial, working definition of independent study has been refined.

10. Under the revised definition of independent study, five plans seem to embrace all types of independent study.

Further Research Needed

Based upon the present study, USOE Cooperative Research Project No. 2969, and the companion studies of Wells (1966) and Bentley (1966) now in progress, it is possible to see more clearly the present status of independent study and some directions for future investigation:

1. Results of this study should lead to the refinement of present instruments for use in subsequent studies. A more comprehensive list of values and problems is now at hand than existed before.

2. More systematic evaluation should be possible for independent study. We now have a clearer idea of purposes -- both faculty and student purposes -- and of the unique types of independent study programs to which each purpose applies. This will make possible the systematic study and comparison of different types of programs and, with the development of appropriate instruments, the extent to which these purposes are achieved.

3. Comparisons between the various independent study patterns and conventional class work is an indicated next step. Also, useful comparisons can be made among independent study patterns.

4. What is the influence upon career choices of independent study over time within a given area?

5. How are attitudes toward school and toward particular disciplines influenced by extended independent study within these areas?

6. Long-range experimental studies are desirable to assess the comparative effectiveness of independent study and regular class instruction. Answers are needed to questions such as these: Does a student learn more in independent study than in conventional classes as measured by appropriate instruments which are not strongly biased toward independent or group instruction? What are differences in outcomes among different curriculum areas? What is the cumulative impact of independent study when it is pursued for 2, 3, or more years within a single area, such as science or social studies? These studies should include random selection and assignment of students, the best possible experimental designs, and appropriate statistical treatments.

7. Ultimately, independent study students and their controls should be studied in college and professional schools, as well as on post-school jobs, to see if there are relationships between independent study at the secondary school level and later academic progress or vocational success.

8. What improvements can be made to assist students in reaching their goals in independent study, especially in terms of present programs which are not doing this adequately?

9. How can independent study be extended? We feel that this initial study has suggested enough worth that extension is desirable while further studies are made. This extension should be toward the inclusion of more schools, more subject areas, pupils of average or less-than-average ability, and more pupils in grades 7 through 10.

10. How can pre-service and in-service preparation be provided for teachers of independent study or for those who might become independent study coordinators?

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Appendix A

Type of Program: ______________________________

Information Provided By:

______________________ ______________________
Name **Position**

School: ______________________________

Interviewer: ______________ **Date:** ______________

FACTUAL INFORMATION ON AN INDEPENDENT STUDY PROGRAM

1. **Grades in which this program is offered:** 7th ___ 8th ___ 9th ___ 10th ___ 11th ___ 12th ___

SUBJECT	TOTAL NO. STUDENTS IN THIS PROGRAM	TOTAL NO. STUDENTS ENROLLED IN SUBJECT		TOTAL NO. TEACHERS WORKING IN THIS PROGRAM	TOTAL NO. TEACHERS IN SUBJECT	

2. Method of student selection for this program — Nominated by teacher ____ Elected by student ____

3. Method of screening students — Test scores ____ Teacher evaluation ____

Who decides? ________________________

4. What recognition is given students included — Grades ____ Notation on transcript ____

Other: ________________________

5. School facilities used in this program — Library ____ Resource Centers ____ Labs ____

Shops ____ Other: ________________________

6. Community resources utilized — Consultants ____ Industrial Facilities ____

Research Facilities ____ Libraries ____

Other: ________________________

7. Written description of this independent study program:

a) available — Yes ____ No ____

b) prepared by — Name: ________________________

Position: ________________________

c) prepared for — District ____ Individual School ____

Other: ________________________

8. Any other materials which should be consulted

____

____

9. School year this program began ________

10. How does this program affect teacher's workload? — Increased ____ Same ____ Reduced ____

11. How many students per week per teacher in five periods ________

Appendix B

Name: ______________________________

Position: ______________________________

School: ______________________________

Interviewer: ______________________________

Date: ____________________ Tape No. ________

INTERVIEW GUIDE FOR PRINCIPALS AND OTHERS

1. What programs in this school do you think of as independent study?

    1.

    2.

    3.

    4.

    5.

2. What are the purposes of each program?

    1.

    2.

    3.

    4.

    5.

3. Are there other programs you have thought about classifying as independent study? (Correspondence study, supervised work experience projects in vocational subjects, individual remedial instruction, science projects, etc.....)

4. What special training is given to faculty members supervising independent student, either before or after they begin?

5. What background experiences of teachers would be helpful for working with independent study programs?

6. Have the work loads of teachers supervising independent study students been adjusted? How?

7. Where did you get the idea for this program?

8. What school facilities are made available for independent study students outside school hours?

9. What specific demands has independent study placed upon the administration? (e.g. time, finances, scheduling, facilities, equipment, etc.)?

10. Other comments you would like to make:

11. Additional items to cover:

a. Student enrollment by grade: 7th ____ 8th ____ 9th ____
10th ____ 11th ____ 12th ____

b. Total school enrollment: ________

c. Total number of teachers: ________

d. Faculty directory (get copy)

e. Comprehensive written description of program (get copy)

f. Evaluative data (e.g. comparative achievement; follow-up studies; opinion polls; etc.) regarding the program(s) (get copy).

g. Persons to complete "Fact Sheet" for each program:

PROGRAM	PERSON
____________	____________
____________	____________
____________	____________
____________	____________
____________	____________
____________	____________

Appendix C

Type of Program: ______________________________

____

Name: ______________________________

Position: ______________________________

School: ______________________________

Interviewer: ______________________________

Date: ______________________ Tape No. ________

INTERVIEW GUIDE FOR PARTICIPATING TEACHERS

1. a. How do you describe the independent study program in which you teach?

   b. How long have you been associated with it?

2. What are its purposes?

3. How many students are involved in this program?

4. Is this about the normal number or is it more or less than this ordinarily?

5. Do students in this program work in addition to or in lieu of regular class attendance and homework?

6. How many students in this program can you supervise adequately for each regular class removed from your teaching load?

7. Why do the students participate in this program?

8. What kinds of activities do your students ordinarily do in this program?

9. What are the products of your students' work?

10. When do the students do their work?

11. How do you supervise their work?

12. When do you confer with them? How often?

13.. How do you evaluate and record their work?

14. Are there any facilities or resources which the school does not have which you feel would enhance the program? If so, what are they?

15. Have you had any special background experiences which help you with this program?

    a. If so, what kind of experiences did you have?

    b. If not, what kind of experiences might have been helpful to you before you began?

16. Where did you get the idea for this program?

17. What specific demands has this program placed upon you in terms of

    a. additional work load

    b. additional study and training

    c. continuing in-service education

    d. other

18. Additional comments which the interviewee would like to make:

Appendix D

Type of Program: ____

____

Name of School: ____

Name of Interviewer: ____________________________________

Name of Interviewee: ____________________________________

Date: ______________________________ **Tape No.:** _____

STUDENT INTERVIEW AND EVALUATION GUIDE

I. DESCRIPTION

1. How do you define independent study?

2. What type of independent-study work are you doing?

3. Did you enter this program voluntarily? ___ yes

___ no

(a) If voluntary, why did you decide to do this type of work?

(b) If voluntary, would you choose to do it again?

(c) If not voluntary, why are you doing it? (course requirement, requirement of the school?, etc.)

4. How many months have you been in this program?

5. What is the specific project (the experiment, the topic, the investigation) you are working on?

6. Did you choose this type of project?

___ yes

___ no

If yes, why did you choose it?

7. What will be the results of your independent study work ?

8. Compared to work required for your regular classes, independent study work takes

___ more time?

___ less time?

___ about the same amount of time?

9. What ways of working have you learned from doing this type of independent study which you can use in other classes and activities?

10. What do you feel are the values or benefits you will receive from doing this type of independent study work?

11. What do you feel are the weaknesses or disadvantages of doing it?

II. FACILITIES

12. Where is your independent study work carried on?

13. What facilities and resources (equipment, materials, etc.) are used for it?

14. Are there any of these facilities or resources which you have never used before for regular class work?

15. Are there any which are reserved just for students doing this type of independent study work?

16. Are there any things (facilities - resources) which you really need for your independent study work which the school doesn't have? If so, what are they?

III. EVALUATION

17. How much time do you have for this type of work?

18. What kinds of things do you do during this time?

19. Are you given enough independent study time?

20. How are you supervised while doing independent study work?

    (a) By whom?

    (b) How often?

21. How do you keep from wasting independent study time?

22. How are you going to be graded for your work?

23. If no grade, in what other way is your independent study work to be recognized?

24. For your independent study work, how much help do you receive by working with

    (a) other students?

    (b) teachers?

    (c) other staff members?

25. Are there any other comments which you would like to make?

Appendix E

INDEPENDENT STUDY IN SECONDARY SCHOOLS

_____Principal
_____Assistant Principal
_____Supervisor of Instruction
_____Department Chairman
_____Counselor
_____Teacher Participating in
Independent Study Program
_____Other (please specify):______________________________

School:______________________________

Date:______________________________

Type of Program:______________________________

____

A. EVALUATION OF STUDENTS DOING INDEPENDENT STUDY

Please evaluate the group of students who are participating in this program of independent study in relation to all other students in the same grades in your school.

Beneath each of the items which follow is a numbered scale. Please place check (√) marks at two points along the line to indicate the range within which the independent-study students would fall.

EXAMPLE

Ability to accept responsibility

(1)-----------(2)----------✓(3)----------✓(4)-----------(5)
Least Able — Average — Most Able

In this illustration, the range of students doing independent study is checked as from just below to somewhat better than average, in their ability to accept responsibility.

NOTE: If you are unable to judge an item, make no marks. Please feel free to write comments in relation to any of the items.

1. Ability to solve problems

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Able — Average — Most Able

2. Depth of understanding of subject matter

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Depth — Average — Most Depth

3. Knowledge of the subject matter area(s)

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Knowledge — Average — Most Knowledge

4. Resourcefulness and skill in locating helpful information

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Skillful — Average — Most Skillful

5. Ability to work independently with little or no supervision

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Able — Average — Most Able

6. Intellectual curiosity about learning new things

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Very Slight Curiosity — Average — Most Curiosity

7. Creativity, tendency to produce original products, to think original thoughts

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Original — Average — Most Original

8. Tendency, ability, resourcefulness in setting up experiments to find out

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Able — Average — Most Able

9. Ability to budget time wisely

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Able — Average — Most Able

10. Responsibility for regular attendance and punctuality

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Dependable — Average — Highly Dependable

11. Participation in school-sponsored extra-curricular activities

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Minimum — Average — Maximum

12. Acceptance of leadership responsibility

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Accepting — Average — Most Accepting

13. Interest in school

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Slight Interest — Average — Strong Interest

14. Satisfaction from learning

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Least Satisfaction · Average · Most Satisfaction

15. Degree of self-appraisal in relation to aptitudes, abilities, achievements

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Poor Self-Appraisal · Average · Very Accurate Self-Appraisal

16. Personal and social adjustment (i.e. degree of emotional maturity and adjustment)

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Poorly Adjusted · Average · Outstandingly Well Adjusted

17. Goal orientation beyond high school toward continued (higher) education and/or vocational roles

(1)-----------(2)-----------(3)-----------(4)-----------(5)
Extremely Vague · Average · Extremely Clear

18. Any other items you care to list and evaluate:

B. EVALUATION OF PROVISIONS FOR INDEPENDENT STUDY

Listed below are items which may or may not be characteristics of your school's facilities, equipment, supplies and resources used for independent study. Please evaluate them according to the following directions.

First, circle one of the letters to the left of the provision, with respect to the key given. Second, circle the number or letter to the right of the provision using your knowledge of the program as the source for judging.

KEY

HOW ADEQUATE?

E - Very adequate provision or use is made

S - Moderately adequate provision or use is made

L - Very limited provision or use is made

M - Provision or use is missing but needed

N - Provision or use is not desirable or does not apply

HOW WELL USED?

5 - EXCELLENT, extensive provision and use being made and functioning excellently

4 - VERY GOOD
  a. extensive provision and use being made and functioning well or
  b. moderately extensive provision and use being made and functioning excellently

3 - GOOD, moderately extensive provision and use is being made and functioning well

2 - FAIR
  a. moderately extensive provision and use being made but functioning poorly or
  b. limited provision but functioning well

1 - POOR, limited provision and use being made and functioning poorly

M - MISSING, but need is questioned; further consideration needs to be given

N - DOES NOT APPLY, missing or does not apply

EXAMPLE A

E [✓ S] L M N	Teaching Machines	5 4 [✓ 3] 2 1 M N

EXAMPLE B

E S L [✓ M] N	Study Rooms	5 4 3 [✓ 2] 1 M N

HOW ADEQUATE?		HOW WELL USED?
E S L M N	1. School library	5 4 3 2 1 M N
E S L M N	2. Classroom library	5 4 3 2 1 M N
E S L M N	3. Departmental resource center	5 4 3 2 1 M N
E S L M N	4. Science laboratories	5 4 3 2 1 M N
E S L M N	5. Language laboratories	5 4 3 2 1 M N
E S L M N	6. Study rooms	5 4 3 2 1 M N
E S L M N	7. Individual study or work spaces (carrels, studios, etc.)	5 4 3 2 1 M N
E S L M N	8. Teaching machines	5 4 3 2 1 M N
E S L M N	9. Tapes and recorders	5 4 3 2 1 M N
E S L M N	10. Records and phonographs	5 4 3 2 1 M N
E S L M N	11. Microfilm and projectors	5 4 3 2 1 M N
E S L M N	12. Variety of reading improvement devices	5 4 3 2 1 M N
E S L M N	13. Other (please list and evaluate):	5 4 3 2 1 M N

C. VALUES OF INDEPENDENT STUDY

Preceding each of the items listed below is a series of numbers (0, 1, 2, 3). According to the scale which follows, please circle one of the numbers to indicate your rating of each of the possible outcomes of independent study.

0 -- IRRELEVANT; OF NO VALUE
1 -- OF LITTLE VALUE
2 -- OF MODERATE VALUE
3 -- OF GREAT VALUE

0 1 2 3 -- (a) Develops independence, responsibility, self-direction

0 1 2 3 -- (b) Provides opportunity for study under optimum conditions

0 1 2 3 -- (c) Allows study of topics beyond the regular curriculum

0 1 2 3 -- (d) Permits maximum use of instructional resources (teachers, facilities, equipment, supplies, materials)

0 1 2 3 -- (e) Provides for needs and interests of the individual student

0 1 2 3 -- (f) Increases achievement of the student in the special area

0 1 2 3 -- (g) Raises level of student's performance in other areas

0 1 2 3 -- (h) Improves articulation between high school and college

0 1 2 3 -- (i) Improves student performance beyond high school: in college, vocational, or technical training

0 1 2 3 -- (j) Other (please list and evaluate):

D. PROBLEMS OF INDEPENDENT STUDY

Preceding each of the items listed below is a series of numbers (0, 1, 2, 3). The items are some possible or actual problems of independent study. According to the scale which follows, please circle one of the numbers to indicate your rating of each:

0 -- IRRELEVANT
1 -- VERY MINOR PROBLEM
2 -- A PROBLEM
3 -- VERY SERIOUS PROBLEM

0 1 2 3 -- (a) Finding more efficient means for identifying and selecting students who can benefit most from the special program

0 1 2 3 -- (b) Offering more positive, constructive help to the interested but underachieving student in the program

0 1 2 3 -- (c) Ensuring continuity of learning experiences throughout the special program at all grade levels

0 1 2 3 -- (d) Offering adequate amounts of instructional time, services of teachers, special programs within the class schedule framework, day to day and week to week

0 1 2 3 -- (e) Achieving uniformity in the program to permit evaluation and continuity

0 1 2 3 -- (f) Providing adequate counseling of independent-study students

0 1 2 3 -- (g) Providing these students with teachers who are comfortable in the role of directors of "independent learning"

0 1 2 3 -- (h) Other (please list and evaluate):

E. OPEN-ENDED ITEMS

1. Briefly explain why you feel that independent study plans should be expanded or curtailed in your school.

2. What is your general evaluation of independent study in your school?

Appendix F

Sample: Letter to State Department of Education

Dear

I am writing to request your help in USOE Cooperative Research Project #2969. This project, "Independent Study in Secondary Schools," is being directed by Professor Vynce A. Hines and myself.

Our project is intended to provide a systematic definition, description, and analysis of independent study practices in selected secondary schools east of the Mississippi River. We are defining independent study plans in grades 7 through 12 as those which: (1) differ from uniform homework assignments (including individualized assignments in classes where each student must have such an assignment); (2) involve studies carried on in school facilities, or in outside facilities by arrangement of teachers; (3) are individually planned for each student concerned; and (4) receive school recognition in the form of course credit, full or partial, or other evaluation entered in official school records.

Would you, Dr. , please give us a list of all secondary schools in which use independent study plans as described above? In listing these schools, would you please indicate for each school the following items of information:

1. Name of school and address
2. Name of principal
3. Type of community: urban, suburban, or rural
4. Grades included
5. Approximate enrollment
6. Whether public or private

Could we, please, have a response to this inquiry within the next few days so that we can proceed with the selection of schools for intensive study? Thanks very much.

Sincerely yours,

Wm. M. Alexander

WMA:vc

Appendix G

TOTAL LIST OF SCHOOLS

STATE	CITY	SCHOOL
ALABAMA	Theodore	Theodore High School
ARIZONA	Patagonia	Patagonia Union High School
ARIZONA	Sahuarita	Sahuarita School
ARIZONA	Tucson	Amphitheater High School
ARIZONA	Tucson	Flowing Wells High School
ARKANSAS	El Dorado	El Dorado High School
ARKANSAS	Pine Bluff	Pine Bluff High School
CALIFORNIA	Anaheim	Brookhurst Junior High School
CALIFORNIA	Castro Valley	Canyon High School
CALIFORNIA	Covina	South Hills High School
CALIFORNIA	Bassett	Bassett High School
CALIFORNIA	Milpitas	Piedmont Hills High School
CALIFORNIA	Milpitas	Samuel Ayer High School
CALIFORNIA	Modesto	Grace Davis High School
CALIFORNIA	Modesto	Modesto High School
CALIFORNIA	Modesto	Thomas Downey High School
CALIFORNIA	Palo Alto	Gunn Senior High School
CALIFORNIA	San Diego	James Madison High School
CALIFORNIA	San Jose	Andrew Hill High School
CALIFORNIA	San Jose	James Lick High School
CALIFORNIA	San Jose	Mount Pleasant High School
CALIFORNIA	San Jose	William C. Overfelt High School
CALIFORNIA	San Mateo	Hillsdale High School
CALIFORNIA	Stockton	Lincoln High School
CALIFORNIA	Sunnyvale	Fremont High School
CALIFORNIA	Sunnyvale	Homestead High School
COLORADO	Broomfield	Broomfield High School
COLORADO	Denver	Mapleton High School
COLORADO	Englewood	Cherry Creek High School
COLORADO	Greeley	Greeley High School
COLORADO	Littleton	Littleton High School
COLORADO	Meeker	Meeker School
COLORADO	Rangely	Rangely High School
CONNECTICUT	Glastonbury	Glastonbury School District
CONNECTICUT	Greenwich	Greenwich School District
CONNECTICUT	Norwalk	Norwalk School District
CONNECTICUT	Oakville	Regional High School District No. 6
CONNECTICUT	Stamford	Stamford School District
CONNECTICUT	Stratford	Frank Scott Bunnell High School
CONNECTICUT	West Hartford	William Hall High School
CONNECTICUT	Wilton	Wilton High School
CONNECTICUT	Wilton	Wilton School District
DELAWARE	Newark	Christiana High School

STATE	CITY	SCHOOL
DELAWARE	Newark	Newark Senior High School
DELAWARE	New Castle	De La Warr Senior High School
DELAWARE	Wilmington	Brandywine High School
DELAWARE	Wilmington	Wilmington High School
FLORIDA	Cocoa Beach	Cocoa Beach High School
FLORIDA	Coral Gables	Coral Gables Senior High School
FLORIDA	Eau Gallie	Eau Gallie High School
FLORIDA	Fort Lauderdale	Nova Junior-Senior High School
FLORIDA	Hialeah	Hialeah Senior High School
FLORIDA	Jacksonville	Jefferson Davis Junior High School
FLORIDA	Melbourne	Melbourne High School
FLORIDA	Miami	Miami Senior High School
FLORIDA	Miami Beach	Miami Beach High School
FLORIDA	Miami Springs	Miami Springs Senior High School
FLORIDA	Opa Locka	North Dade Junior-Senior High School
FLORIDA	St. Petersburg	St. Petersburg High School
GEORGIA	Atlanta	Brown High School
GEORGIA	Atlanta	Murphy High School
GEORGIA	Atlanta	O'Keefe High School
GEORGIA	Atlanta	West Fulton High School
GEORGIA	Columbus	Baker High School
GEORGIA	Columbus	Columbus High School
ILLINOIS	Arlington Hgts.	Arlington High School
ILLINOIS	Beecher	Beecher High School
ILLINOIS	Cicero	J. Sterling Morton High School
ILLINOIS	Champaign	Champaign Senior High School
ILLINOIS	Chicago	Univ. of Chicago Lab. High School
ILLINOIS	Chicago Heights	Bloom Township High School
ILLINOIS	Elk Grove Village	Grove Junior High School
ILLINOIS	Evanston	Evanston Township High School
ILLINOIS	Fairfield	Fairfield Community High School
ILLINOIS	Geneva	Geneva Community High School
ILLINOIS	Glenview	Glenbrook South High School
ILLINOIS	Highland Park	Highland Park High School
ILLINOIS	Norridge	Ridgewood High School
ILLINOIS	Prospect Heights	Prospect Heights High School
ILLINOIS	Rockford	Guilford High School
ILLINOIS	Rockford	West High School
ILLINOIS	Rolling Meadows	Carl Sandburg School
ILLINOIS	Skokie	Lincoln Junior High School
ILLINOIS	Skokie	Old Orchard Junior High School
ILLINOIS	Urbana	University of Illinois High School
ILLINOIS	Urbana	Urbana High School
INDIANA	Acton	Franklin Central High School
INDIANA	Bloomington	Bloomington Jr.-Sr. High School
INDIANA	Bloomington	Univ. of Indiana High School
INDIANA	Boonville	Boonville High School

STATE	CITY	SCHOOL
INDIANA	Clarksville	Clarksville Jr.-Sr. High School
INDIANA	Crawfordsville	Crawfordsville High School
INDIANA	East Chicago	George Washington High School
INDIANA	East Chicago	Theodore Roosevelt High School
INDIANA	Elkhart	Elkhart High School
INDIANA	Evansville	Benjamin Bosse High School
INDIANA	Evansville	Central High School
INDIANA	Evansville	North High School
INDIANA	Evansville	William Henry Harrison High School
INDIANA	Fort Wayne	North Side High School
INDIANA	Fort Wayne	South Side High School
INDIANA	Frankfort	Frankfort High School
INDIANA	Gary	Emerson School
INDIANA	Gary	Froebel School
INDIANA	Gary	Horace Mann High School
INDIANA	Gary	Lew Wallace High School
INDIANA	Gary	Theodore Roosevelt High School
INDIANA	Gary	Tolleston High School
INDIANA	Gary	William A. Wirt High School
INDIANA	Goshen	Goshen High School
INDIANA	Hammond	Hammond High School
INDIANA	Huntington	Huntington High School
INDIANA	Indianapolis	Arlington High School
INDIANA	Indianapolis	Arsenal Technical High School
INDIANA	Indianapolis	Ben Davis High School
INDIANA	Indianapolis	Broad Ripple High School
INDIANA	Indianapolis	Crispus Attucks High School
INDIANA	Indianapolis	Emmerich Manual Training High School
INDIANA	Indianapolis	George Washington High School
INDIANA	Indianapolis	North Central High School
INDIANA	Indianapolis	Northwest High School
INDIANA	Indianapolis	Shortridge High School
INDIANA	Indianapolis	Southport High School
INDIANA	Indianapolis	Thomas Carr Howe High School
INDIANA	Indianapolis	Warren Central High School
INDIANA	Kokomo	Kokomo High School
INDIANA	Lafayette	Jefferson Senior High School
INDIANA	Lawrence	Lawrence Central High School
INDIANA	Marion	Marion High School
INDIANA	Mishawaka	Penn High School
INDIANA	Mt. Vernon	Mt. Vernon High School
INDIANA	Muncie	Muncie Central Senior High School
INDIANA	Munster	Munster High School
INDIANA	New Albany	New Albany Senior High School
INDIANA	New Castle	Walter P. Chrysler Memorial High School

STATE	CITY	SCHOOL
INDIANA	Noblesville	Noblesville High School
INDIANA	Richmond	Richmond Senior High School
INDIANA	Seymour	Seymour Senior High School
INDIANA	South Bend	Central Jr.-Sr. High School
INDIANA	South Bend	James Whitcomb Riley High School
INDIANA	South Bend	John Adams High School
INDIANA	South Bend	Washington High School
INDIANA	Speedway	Speedway High School
INDIANA	Terre Haute	Garfield High School
INDIANA	Terre Haute	Gerstmeyer Technical High School
INDIANA	Terre Haute	Honey Creek High School
INDIANA	Terre Haute	Terre Haute State Univ. Lab. School
INDIANA	Terre Haute	Wiley High School
INDIANA	Valparaiso	Valparaiso High School
INDIANA	Wabash	Wabash High School
INDIANA	Warsaw	Warsaw High School
INDIANA	West Lafayette	West Lafayette High School
KANSAS	Lawrence	Lawrence High School
KANSAS	Salina	Salina High School
KANSAS	Topeka	Topeka West High School
KENTUCKY	Lexington	Tate's Creek High School
KENTUCKY	Lexington	Beaumont Junior High School
KENTUCKY	Louisville	Archdiocese of Louisville
LOUISIANA	Baton Rouge	East Baton Rouge High School
LOUISIANA	New Orleans	Ben Franklin High School
MARYLAND	Baltimore	Dunbarton Junior High School
MARYLAND	Baltimore	Perry Hall Senior High School
MARYLAND	Baltimore	Pikesville Senior High School
MARYLAND	Baltimore	Pimlico Junior High School No. 222
MARYLAND	Baltimore	Western Senior High School No. 407
MARYLAND	Hagerstown	North Hagerstown High School
MARYLAND	Potomac	Winston Churchill High School
MARYLAND	Rockville	Julius West Junior High School
MARYLAND	Rockville	Randolph Junior High School
MARYLAND	Rockville	West Rockville Junior High School
MARYLAND	Silver Spring	John F. Kennedy Jr.-Sr. High School
MAINE	Bangor	Bangor Senior High School
MASSACHUSETTS	Amherst	Amherst-Pelham Regional High School
MASSACHUSETTS	Newton	Newton High School
MASSACHUSETTS	Newton Center	Meadowbrook Junior High School
MASSACHUSETTS	Sharon	Sharon High School
MASSACHUSETTS	Wayland	Wayland High School
MASSACHUSETTS	Weston	Weston High School
MICHIGAN	Ann Arbor	Ann Arbor High School
MICHIGAN	Detroit	Cass Technical High School
MICHIGAN	Essexville	Essexville-Hampton High School
MICHIGAN	Flint	Central Community High School

STATE	CITY	SCHOOL
MICHIGAN	Flint	Southwestern Community High School
MICHIGAN	Harbor Beach	Harbor Beach Community High School
MICHIGAN	Holland	Holland High School
MICHIGAN	Mt. Clemens	Chippewa Valley High School
MICHIGAN	Muskegon	Muskegon Senior High School
MICHIGAN	North Muskegon	North Muskegon High School
MICHIGAN	Saginaw	Buena Vista High School
MINNESOTA	St. Paul	Alexander Ramsey High School
MISSOURI	Clayton	Clayton High School
MISSOURI	Ellisville	Lafayette High School
MISSOURI	Columbia	Univ. of Missouri Lab. School
MISSOURI	St. Louis	Ladue High School
MISSOURI	Riverview Gardens	Riverview Gardens Public Schools
MISSOURI	University City	University City High School
MONTANA	Deer Lodge	Powell County High School
NEBRASKA	Beatrice	Beatrice High School
NEBRASKA	Hastings	Hastings Junior High School
NEBRASKA	Hastings	Hastings Senior High School
NEBRASKA	Lincoln	University High School
NEBRASKA	Kearney	Kearney Junior High School
NEBRASKA	Kearney	Kearney Senior High School
NEBRASKA	Omaha	Westside High School
NEBRASKA	Sidney	St. Patrick's Academy
NEVADA	Alamo	Pahranagat Valley High School
NEVADA	Carlin	Carlin High School
NEVADA	Las Vegas	Rancho High School
NEVADA	Las Vegas	Valley High School
NEVADA	Mesquite	Virgin Valley High School
NEW HAMPSHIRE	Concord	St. Paul's School
NEW HAMPSHIRE	Exeter	Philips Exeter Academy
NEW HAMPSHIRE	Milford	Milford Senior High School
NEW HAMPSHIRE	New Hampton	New Hampton School
NEW HAMPSHIRE	Plymouth	Holderness School for Boys
NEW HAMPSHIRE	Tilton	Tilton School
NEW JERSEY	Caldwell	Grover Cleveland Junior High School
NEW JERSEY	Scotch Plains	Scotch Plains-Fanwood Jr. High School
NEW JERSEY	Verona	Verona High School
NEW YORK	Amenia	Webutuck Central School
NEW YORK	Ardsley	Ardsley High School
NEW YORK	Bedford	The Fox Lane School
NEW YORK	Briarcliff Manor	Briarcliff Public Schools
NEW YORK	Oneonta	Oneonta State College Project
NEW YORK	Central Islip	Central Islip High School
NEW YORK	Eastchester	Eastchester High School
NEW YORK	Hicksville	Hicksville Public Schools
NEW YORK	Huntington	Half Hollow Hills High School
NEW YORK	Latham	Shaker High School
NEW YORK	Mamaroneck	Rye Neck High School

STATE	CITY	SCHOOL
NEW YORK	Middletown	Middletown High School
NEW YORK	New York	Rhodes School
NEW YORK	Northport	Northport High School
NEW YORK	Oneida	Oneida County Schools
NEW YORK	Poughkeepsie	Harold C. Storm High School
NEW YORK	Port Jefferson	Earl L. Vandermeulen High School
NEW YORK	Valhalla	Valhalla High School
NEW YORK	Wappingers Falls	Roy C. Ketcham High School
NORTH CAROLINA	Boone	Appalachian High School
NORTH CAROLINA	Charlotte	East Mecklenburg High School
NORTH CAROLINA	Charlotte	Myers Park High School
NORTH CAROLINA	Raleigh	Needham B. Broughton High School
NORTH CAROLINA	Raleigh	William G. Enloe High School
NORTH CAROLINA	Tarboro	Tarboro High School
NORTH CAROLINA	Winston-Salem	Reynolds High School
NORTH DAKOTA	Fargo	Central High School
NORTH DAKOTA	Grand Forks	Grand Forks Central High School
OHIO	Chagrin Falls	Chagrin Falls High School
OHIO	Cleveland	Central Junior High School
OHIO	Dover	Dover High School
OHIO	Euclid	Euclid Central Junior High School
OHIO	Euclid	Euclid Senior High School
OHIO	Painesville	Thomas W. Harvey High School
OHIO	Rocky River	Rocky River High School
OHIO	Shaker Heights	Shaker Heights High School
OREGON	Lake Oswego	Lake Oswego High School
OREGON	Portland	Marshall High School
OREGON	Eugene	Willamette High School
OREGON	Bend	Bend Senior High School
PENNSYLVANIA	Abington	Abington High School
PENNSYLVANIA	Easton	Easton Junior High School
PENNSYLVANIA	Pittsburgh	Schenley High School
RHODE ISLAND	Middletown	Middletown High School
SOUTH CAROLINA	Aiken	Aiken Senior High School
SOUTH CAROLINA	Anderson	T. L. Hanna High School
SOUTH CAROLINA	Beaufort	Beaufort High School
SOUTH CAROLINA	Camden	Camden Senior High School
SOUTH CAROLINA	Chapin	Chapin High School
SOUTH CAROLINA	Columbia	A. C. Flora Senior High School
SOUTH CAROLINA	Columbia	Columbia High School
SOUTH CAROLINA	Columbia	Dreher High School
SOUTH CAROLINA	Rock Hill	Rock Hill High School
SOUTH CAROLINA	Rock Hill	Winthrop Training School
SOUTH CAROLINA	Spartanburg	Spartanburg Senior High School
SOUTH CAROLINA	Sumter	Edmunds High School
SOUTH DAKOTA	Aberdeen	Aberdeen Senior High School
SOUTH DAKOTA	Rapid City	Rapid City High School
SOUTH DAKOTA	Sioux Falls	Washington Senior High School

STATE	CITY	SCHOOL
TENNESSEE	Chattanooga	Dalewood Junior High School
TENNESSEE	Memphis	Corry Junior High School
TENNESSEE	Memphis	Lincoln Junior High School
TENNESSEE	Memphis	Sherwood Junior High School
TENNESSEE	Memphis	Trezevant High School
TEXAS	Corpus Christi	Corpus Christi Public Schools
TEXAS	Denison	Denison Public Schools
TEXAS	San Antonio	Alamo Heights High School
TEXAS	San Marcos	San Marcos Academy
TEXAS	Victoria	Victoria High School
UTAH	Bountiful	Bountiful High School
UTAH	Provo	Brigham Young Laboratory School
UTAH	Roy	Roy High School
VERMONT	Springfield	Springfield Senior High School
VIRGINIA	Arlington	Wakefield High School
VIRGINIA	Arlington	Washington-Lee High School
VIRGINIA	Arlington	Yorktown High School
VIRGINIA	Richmond	Armstrong High School
VIRGINIA	Richmond	George Wythe High School
VIRGINIA	Richmond	John Marshall High School
VIRGINIA	Richmond	Maggie Walker High School
VIRGINIA	Richmond	Thomas Jefferson High School
VIRGINIA	Roanoke	Booker T. Washington Jr. High School
VIRGINIA	Roanoke	Lee Junior High School
VIRGINIA	Roanoke	Patrick Henry High School
VIRGINIA	Roanoke	William Fleming High School
WASHINGTON	Seattle	Glendale Junior High School
WASHINGTON	Seattle	Shoreline High School
WASHINGTON	Spokane	Havermale Junior High School
WASHINGTON	Spokane	Joel E. Ferris High School
WEST VIRGINIA	Charleston	George Washington High School
WEST VIRGINIA	Weirton	Weir High School
WISCONSIN	Mazomanie	Wisconsin Heights High School
WISCONSIN	New Berlin	New Berlin High School
WISCONSIN	New Cumberland	Oak Glen High School
WISCONSIN	West Allis	Nathan Hale High School
WISCONSIN	West Allis	West Allis Central High School
WYOMING	Green River	Green River High School
WYOMING	Sheridan	Sheridan High School

Appendix H

LIST OF THE 36 COOPERATING SECONDARY SCHOOLS

STATE	CITY	HIGH SCHOOL
ARIZONA	Tucson	Amphitheater
CALIFORNIA	Bassett	Bassett
CALIFORNIA	San Jose	Andrew Hill--East Side Union Dist.
CALIFORNIA	Stockton	Lincoln
COLORADO	Littleton	Littleton
DELAWARE	Wilmington	Wilmington
FLORIDA	Cocoa Beach	Cocoa Beach
FLORIDA	Coral Gables	Coral Gables
FLORIDA	Miami	Miami
ILLINOIS	Evanston	Evanston Township
ILLINOIS	Chicago	University of Chicago Lab. School
ILLINOIS	Urbana	University
KANSAS	Salina	Salina
LOUISIANA	New Orleans	Benjamin Franklin
MARYLAND	Silver Spring	John F. Kennedy
MICHIGAN	Flint	Flint Community
MICHIGAN	Mount Clemens	Chippewa Valley
MISSOURI	University City	University City
NEBRASKA	Beatrice	Beatrice
NEVADA	Las Vegas	Valley
NEW HAMPSHIRE	New Hampton	The New Hampton School
NEW YORK	Huntington	Half Hollow Hills
NEW YORK	Middletown	Middletown
NEW YORK	Port Jefferson	Earl L. Vandermeulen
OHIO	Shaker Heights	Shaker Heights
PENNSYLVANIA	Easton	Easton Junior
SOUTH CAROLINA	Camden	Camden
SOUTH CAROLINA	Columbia	A. C. Flora
TENNESSEE	Chattanooga	Dalewood Junior
TEXAS	Victoria	Victoria
VIRGINIA	Arlington	Washington-Lee
VIRGINIA	Richmond	George Wythe
VIRGINIA	Roanoke	William Fleming
WASHINGTON	Seattle	Shoreline
WEST VIRGINIA	New Cumberland	Oak Glen
WISCONSIN	Mazomanie	Wisconsin Heights

Appendix I

Type of Program: ____________________

School Name: ____________
Date: ____________
City: ____________

FACT SHEET FOR INDEPENDENT STUDY STUDENTS

Instructions: Please answer the following questions.

1. Age: ________

2. Sex: (check one) Male ______
Female ______

3. Grade: (please circle) 7 8 9 10 11 12

4. Subject area in which you are working independently: (check those in which you are working)

English ______
Social Studies ______
Science ______
Mathematics ______
Foreign Language ______
Art ______

Music ______
Business Education ______
Home Economics ______
Industrial Arts ______
Other (please specify) ______
____

5. Future educational plans:
Do you plan to go on to college after high school? (check one) Yes ______
No ______

6. Future vocational plans ____________________
____

7. How did you enter the program? (check one) Voluntarily? ______
Involuntarily? ______

8. Type of project: study, nature of work being done. (check one)

Library Research Project ____
Laboratory Research Project ____
Other (please specify) ____________________

Creative Project (paint, compose, write) ____

9. What kind of recognition do you receive for your work? (check those applicable)

School grade ____
Notation on school records ____
Award ____

Extra school credit ____
Other (please specify) ____________
____

10. Number of semesters you have spent in independent study including this one? ____

11. Amount of time spent studying in independent study as compared with time spent in a regular course?
Less time ____
About the same amount of time ____
More time ____

12. Number of school offices held in clubs, honorary societies, etc.? ____

13. Number of extra-curricular activities in which you participate? (clubs, sports, etc.) ____

Appendix J

TEACHERS OF INDEPENDENT-STUDY STUDENTS:
RESPONSIBILITIES AND PREPARATION

School ____________________

Date ____________________

Department ____________________

Number of years teaching experience ____

Number of years teaching experience in independent study ____

Type of Program in which you teach--circle one of the numbers below according to the descriptions given on the last page of this questionnaire:

1 2 3 4 5 6 7 8 9 10

I. RESPONSIBILITIES OF TEACHERS OF INDEPENDENT-STUDY

Think in terms of an independent-study program as it should be. Please rate the following responsibilities according to their importance to teachers of independent-study students by circling the number which best represents your beliefs, as follows:

(0)	(1)	(2)	(3)
Of No Value	**Of Some Value**	**Needed**	**Mandatory**

EXAMPLE:

0 1 2 [✓ 3] Keeping abreast of the recent developments in education by reading articles in professional journals

In this illustration, the 3 has been circled to indicate that this item is considered as a "must" to the teacher of independent-study students.

A. CURRICULUM PLANNING FOR INDEPENDENT-STUDY PROGRAMS

0 1 2 3 (a) Developing purposes and objectives of an independent-study program

0 1 2 3 (b) Selecting content of an independent-study program in terms of attitudes, interests, and abilities

0 1 2 3 (c) Preparing a course of study, course outline, or syllabus of an independent-study program

0 1 2 3 (d) Developing criteria or scales to evaluate student progress in independent-study

SECTION A

(0)-------------(1)-------------(2)-------------(3)
Of No Value **Of Some Value** **Needed** **Mandatory**

0 1 2 3 (e) Interpreting the program of independent study to other faculty members

0 1 2 3 (f) Helping other teachers learn the responsibilities of teaching independent-study students

0 1 2 3 (g) Surveying materials, equipment and spaces for independent study as to availability and usefulness

0 1 2 3 (h) Surveying community resources to determine usable and available ones for an independent-study program

0 1 2 3 (i) Informing parents of all students about an independent-study program

0 1 2 3 (j) Informing citizens in general about an independent-study program

0 1 2 3 (k) Interpreting the independent-study program to parents of independent-study students

0 1 2 3 (l) Planning facilities, materials and services needed for independent study

0 1 2 3 (m) Estimating costs of facilities, materials and services needed for independent study

0 1 2 3 (n) Selecting facilities, materials and services needed for independent study

0 1 2 3 (o) Assisting students in selecting courses in which they would be doing independent-study work

0 1 2 3 (p) Planning and participating in evaluating the independent-study program (opinion polls, etc.)

0 1 2 3 (q) Planning independent-learning activities in terms of students' attitudes, interests, and abilities

0 1 2 3 (r) Preparing written descriptions of the independent study program for distribution to the public

0 1 2 3 (s) Operating as a consultant on independent study to other schools

(t) Any other items you wish to list and evaluate

0 1 2 3

(0)	(1)	(2)	(3)
Of No Value	Of Some Value	Needed	Mandatory

B. SELECTION AND ASSIGNMENT OF INDEPENDENT-STUDY STUDENTS

0 1 2 3 (a) Administering diagnostic tests to prospective independent-study students

0 1 2 3 (b) Analyzing and interpreting results of tests given to independent-study students

0 1 2 3 (c) Using teacher recommendations in selecting and admitting students to an independent-study program

0 1 2 3 (d) Establishing prerequisites for admission to independent study

0 1 2 3 (e) Checking student cumulative folders prior to admission decisions

0 1 2 3 (f) Developing and distributing application forms for independent-study programs

0 1 2 3 (g) Evaluating proposed plans or contracts of independent-study students (statement of the problem to be studied and procedures to be used)

0 1 2 3 (h) Making final decisions concerning admission to independent-study programs

0 1 2 3 (i) Nominating students for an independent-study program

0 1 2 3 (j) Making decisions as to the duration of the student's independent study

0 1 2 3 (k) Counseling students as to the advisability of participation in an independent-study program

(l) Any other items you care to list and evaluate

0 1 2 3

0 1 2 3

(0)	(1)	(2)	(3)
Of No Value	**Of Some Value**	**Needed**	**Mandatory**

C. INSTRUCTIONAL ACTIVITIES OF TEACHERS OF INDEPENDENT-STUDY STUDENTS

0 1 2 3 (a) Teaching learning procedures appropriate to proposed independent-study projects

0 1 2 3 (b) Teaching library skills to independent-study students

0 1 2 3 (c) Teaching students to budget their time for independent study

0 1 2 3 (d) Teaching independent-study students to use interview techniques

0 1 2 3 (e) Teaching independent-study students to write plans or proposals for independent-study projects

0 1 2 3 (f) Assisting independent-study students in the preparation of papers for publication

0 1 2 3 (g) Teaching independent-study students to discriminate among goals and activities

0 1 2 3 (h) Teaching independent-study students to discriminate among materials and approaches

0 1 2 3 (i) Offering special teacher help to independent-study students when needed

0 1 2 3 (j) Teaching independent-study students to recognize and respect the differing contributions of individuals

0 1 2 3 (k) Allowing students to do things in their own way (providing for trial-and-error experiences)

0 1 2 3 (l) Encouraging independent-study students to try new ways of doing things

0 1 2 3 (m) Arranging for students of similar interests and abilities to work together

0 1 2 3 (n) Guiding discussions of small groups of independent-study students

0 1 2 3 (o) Developing student responsibility for self-evaluation by requiring periodic written student-progress reports

0 1 2 3 (p) Evaluating student progress through products of independent-study work

SECTION C

(0)-------------(1)-------------(2)-------------(3)
Of No Value   Of Some Value   Needed   Mandatory

0 1 2 3 (q) Using oral examination of independent-study students for purposes of evaluation

0 1 2 3 (r) Assigning independent-study student grades based on evaluation of process and product

0 1 2 3 (s) Providing conference time for independent-study students when needed

0 1 2 3 (t) Using student-teacher conferences as progress checks

0 1 2 3 (u) Promoting initiative and self-direction by minimizing direct supervision

0 1 2 3 (v) Arranging facilities and equipment in the classroom for independent study

0 1 2 3 (w) Planning for independent-study experiences during the school day outside the school facilities

0 1 2 3 (x) Keeping records other than those ordinarily kept by a classroom teacher

0 1 2 3 (y) Providing vocational information in the independent-study student's area of study

(z) Any other items you care to list and evaluate

0 1 2 3

0 1 2 3

II. PREPARATORY EXPERIENCES FOR THE TEACHERS OF INDEPENDENT-STUDY STUDENTS

Think of a program of preparatory experiences for teachers of independent-study students as it should be. Please rate the following preparation experiences according to their importance to teachers of independent-study students by circling the number which best represents your beliefs, as follows:

(0)-------------(1)-------------(2)-------------(3)
Of No Value   Of Some Value   Needed   Mandatory

0 1 2 3 (a) Participation in a similar independent-study program as a student
0 1 2 3 (b) Experimentation with independent study in own classroom
0 1 2 3 (c) Additional work in the subject matter involved
0 1 2 3 (d) Visitation to a similar experimental program in the school system
0 1 2 3 (e) Visitation to a similar experimental program in the school
0 1 2 3 (f) Visitation to a similar experimental program in another school system
0 1 2 3 (g) Teaching experience in a school which used flexible scheduling
0 1 2 3 (h) Teaching experience in a school which was non-graded
0 1 2 3 (i) Teaching experience in a school which used team teaching
0 1 2 3 (j) Specific study and training in counseling independent-study students
0 1 2 3 (k) Group conferences with other teachers of independent-study students
0 1 2 3 (l) Use of experimental materials in national curriculum projects (SMSG, BSCS, etc.)
0 1 2 3 (m) Research experiences as a graduate assistant
0 1 2 3 (n) Research experiences via independent, individual study
0 1 2 3 (o) Work in a tutorial, one-to-one, student-teacher relationship
0 1 2 3 (p) Special preparation for the teaching of reading
0 1 2 3 (q) Internship in a teaching situation using independent-study instruction

PART II

(0)------------(1)------------(2)------------(3)
Of No Value Of Some Value Needed Mandatory

0 1 2 3 (r) Course work or practicum in teaching exceptional children

0 1 2 3 (s) Methods course emphasizing independent study as an instructional approach

0 1 2 3 (t) Participation in a school's development of an independent-study program

0 1 2 3 (u) Participation in special institutes encouraging independent study on the part of members of the institute (such as NSF and NDEA summer or year-long institutes)

0 1 2 3 (v) Formal instruction in library-research skills

0 1 2 3 (w) Participation in and/or direction of seminars emphasizing independent projects

0 1 2 3 (x) Study and/or experience in working with small groups (e.g., groups of 12 or less)

0 1 2 3 (y) Experience in preparing reports of independent study

0 1 2 3 (z) Experience in evaluating reports of independent study prepared by other educators

0 1 2 3 (aa) Writing theses required in graduate work

0 1 2 3 (bb) Participation in research studies requiring the use of statistics

(cc) Any other items you care to list and evaluate

0 1 2 3

0 1 2 3

TEN TYPES OF INDEPENDENT STUDY PROGRAMS IN SECONDARY SCHOOLS*

1. Some released time given from a regular class so that some students may work independently on individually planned studies in addition to class assignments.
2. Some released time given from a regular class so that some students may work independently on individually planned studies in lieu of class assignments.
3. Seminar groups which are smaller than ordinary classes in which students work independently, at least part of the time, on common or individual topics, units, or problems.
4. Individually planned program of curricular study with regularly scheduled time to study independently, in or out of school, with a minimum of teacher direction and supervision.
5. Independent study as part of a program of instruction organized around large- and small-group instruction.
6. Individual extra-curricular enrichment study with students working independently before or after school, or on weekends (school facilities open mornings, nights, or weekends).
7. Vocational or work experience programs of instruction in which students work independently, in or out of school, so that they will develop salable skills.
8. A curricular program which emphasizes the development of student responsibility in regard to the individual's use of regularly offered independent study time. Subsequently, one of the objectives of the school's instructional program is developing the independent, self-directed learner.
9. A regularly scheduled class in the school's instructional program which normally requires that students work independently (e.g. school publications, advanced courses in art, industrial arts, music, etc.) as individual members of a regular class.
10. A regularly scheduled class in the school's instructional program which provides all students with some independent study time in order to accomplish a long-term class assignment, required of all members of the class but which may be individually planned in terms of the specific topic or problem studied.

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*As differentiated, defined, and compiled by James Douglas Wells
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Appendix K
INDEPENDENT STUDY STUDENT'S OPINIONNAIRE

Instructions: We would like to know what you hoped this program would do for you. For each of the statements (items) below, circle "yes" or "no" to show us whether or not it is something you expected from the program.

1. (a) If you circle "no" but now feel that the program is helping you, circle 1, 2, 3, or 4 according to the key below.

   (b) If you circle "no" and you still feel that the program is not helping you, go on to the next line.

2. If you circle "yes," we would like to know how much the program has done what you hoped it would do for you. Therefore, circle 1, 2, 3, or 4 according to the key given below:

1	very little
2	somewhat
3	much
4	very much

I HOPED THAT THIS PROGRAM WOULD HAVE HELPED ME:	Circle "yes" or "no"		If "yes," circle a number: very little	somewhat	much	very much
1. To get satisfaction from what I would be studying.	yes	no	1	2	3	4
2. To increase my achievement in the special area I am studying in this program.	yes	no	1	2	3	4
3. To do better work in my other subjects.	yes	no	1	2	3	4
4. To increase my interest in school.	yes	no	1	2	3	4
5. To look at what I want to do after I finish high school.	yes	no	1	2	3	4
6. To be more self-confident.	yes	no	1	2	3	4
7. To rely on myself more than on others.	yes	no	1	2	3	4
8. To be courageous enough to strike out on my own and try new ways of doing things.	yes	no	1	2	3	4
9. To understand better, ideas, and points of view different from my own.	yes	no	1	2	3	4

	I HOPED THAT THIS PROGRAM WOULD HAVE HELPED ME:	Circle "yes," or "no"		If "yes," circle a number			
				very little	somewhat	much	very much
10.	To be better able to understand and accept differences in other people.	yes	no	1	2	3	4
11.	To learn more about myself, my own aptitudes, abilities, and achievements.	yes	no	1	2	3	4
12.	To become a more mature person.	yes	no	1	2	3	4
13.	To know more about certain subjects.	yes	no	1	2	3	4
14.	To deepen my understanding of a special area of study (a subject).	yes	no	1	2	3	4
15.	To work independently with little or no teacher supervision.	yes	no	1	2	3	4
16.	To budget my time better.	yes	no	1	2	3	4
17.	To accept responsibility for directing my own studying.	yes	no	1	2	3	4
18.	To become more interested in learning.	yes	no	1	2	3	4
19.	To develop a closer student-teacher relationship by working closely with one teacher.	yes	no	1	2	3	4
20.	By offering me special teacher help when I need it.	yes	no	1	2	3	4
21.	To study topics that are not offered in regular classes.	yes	no	1	2	3	4
22.	To provide for my needs and interests as an individual student.	yes	no	1	2	3	4
23.	To improve my abilities to solve problems.	yes	no	1	2	3	4
24.	To improve my ability in developing ways and means for conducting my own independent work.	yes	no	1	2	3	4
25.	To increase my intellectual curiosity about learning new things.	yes	no	1	2	3	4

I HOPED THAT THIS PROGRAM WOULD HAVE HELPED ME:	Circle "yes," or "no"		If "yes," circle a number			
			very little	somewhat	much	very much
26. To increase my ability for producing original products and for thinking original thoughts.	yes	no	1	2	3	4
27. To be able to do things in my own way instead of having to work the way someone else thinks I should.	yes	no	1	2	3	4
28. To have more contact with other students who have similar interests and abilities.	yes	no	1	2	3	4
29. By providing facilities and equipment for specialized independent study.	yes	no	1	2	3	4
30. By offering time for specialized independent work.	yes	no	1	2	3	4
31. By providing personal recognition for my independent study work.	yes	no	1	2	3	4

32. Are there any additional things which you hoped that this program would have done for you which have not been mentioned? ____________________

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33. Are there any additional things which this program has helped you with which have not been mentioned? ____________________

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Appendix L

EVALUATION OF PROVISIONS FOR INDEPENDENT STUDY

FREQUENCIES							FREQUENCIES						
Blank=No Response	E (5)	S (4)	L (3)	M (2)	N (1)	PROVISIONS	5	4	3	2	1	M	N or Blank= No Response
13	107	128	43	5	4	1. School library	66	93	82	29	8	10	12
22	21	80	76	50	51	2. Classroom library	28	46	46	43	26	84	27
38	25	73	67	60	37	3. Departmental resource center	28	42	42	33	23	95	37
71	62	66	14	2	85	4. Science laboratories	46	51	21	12	3	96	71
84	52	32	13	17	102	5. Language laboratories	25	27	21	16	8	124	79
37	35	89	53	44	42	6. Study rooms	34	45	51	39	19	74	38
25	49	59	67	69	31	7. Individual study or work spaces (carrels, studios, etc.)	39	56	36	37	26	76	30
53	20	29	32	63	103	8. Teaching machines	14	20	20	20	15	160	51
35	61	103	39	16	46	9. Tapes and recorders	35	49	68	34	21	62	31
39	52	102	43	10	54	10. Records and phonographs	31	47	64	43	13	66	36
45	49	66	40	51	49	11. Microfilm and projectors	33	31	51	31	8	103	43
63	53	42	40	23	79	12. Variety of reading improvement devices	37	32	28	21	20	103	59

Appendix M

VALUES OF INDEPENDENT STUDY

FREQUENCIES					
Blank=No Response	0	1	2	3	VALUES
4	1	1	45	249	(a) Develops independence, responsibility, self-direction
13	7	11	146	123	(b) Provides opportunity for study under optimum conditions
6	2	5	37	250	(c) Allows study of topics beyond the regular curriculum
10	6	14	93	177	(d) Permits maximum use of instructional resources (teachers, facilities, equipment, supplies, materials)
5	0	2	41	252	(e) Provides for needs and interests of the individual student
6	2	5	67	220	(f) Increases achievement of the student in the special area
23	13	34	155	75	(g) Raises level of student's performance in other areas
19	19	17	86	159	(h) Improves articulation between high school and college
22	6	5	76	191	(i) Improves student performance beyond high school: in college, vocational or technical training

Appendix N

PROBLEMS OF INDEPENDENT STUDY

	FREQUENCIES				
Blank=No Response	0	1	2	3	PROBLEMS
6	32	94	121	47	(a) Finding more efficient means for identifying and selecting students who can benefit most from the special program
13	26	66	120	75	(b) Offering more positive, constructive help to the interested but underachieving student in the program
13	55	76	103	53	(c) Ensuring continuity of learning experiences throughout the special program at all grade levels
14	24	58	96	108	(d) Offering adequate amounts of instructional time, services of teachers, special programs within the class schedule framework, day to day and week to week
14	38	104	101	43	(e) Achieving uniformity in the program to permit evaluation and continuity
11	29	101	97	62	(f) Providing adequate counseling of independent study students
14	42	99	83	62	(g) Providing these students with teachers who are comfortable in the role of directors of "independent learning"